...NOLOGY DEPT.

TELEPHONE and Management ENGINEER

V58 #10

OCTOBER
1954

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THE NATIONAL TELEPHONE MAGAZINE

Featuring in This Issue—

- ★ U.S.I.T.A. HOLDS 57th ANNUAL CONVENTION
- ★ REPORTS ON U.S.I.T.A. DEPARTMENTAL CONFERENCES
- ★ DESIGNING MODERN COMMUNICATION LINES, *by J. N. Petrie*
- ★ QUESTIONS AND ANSWERS, *by Jay G. Mitchell*
- ★ INDUSTRY NEWS BRIEFS ★ WASHINGTON BUREAU REPORTS

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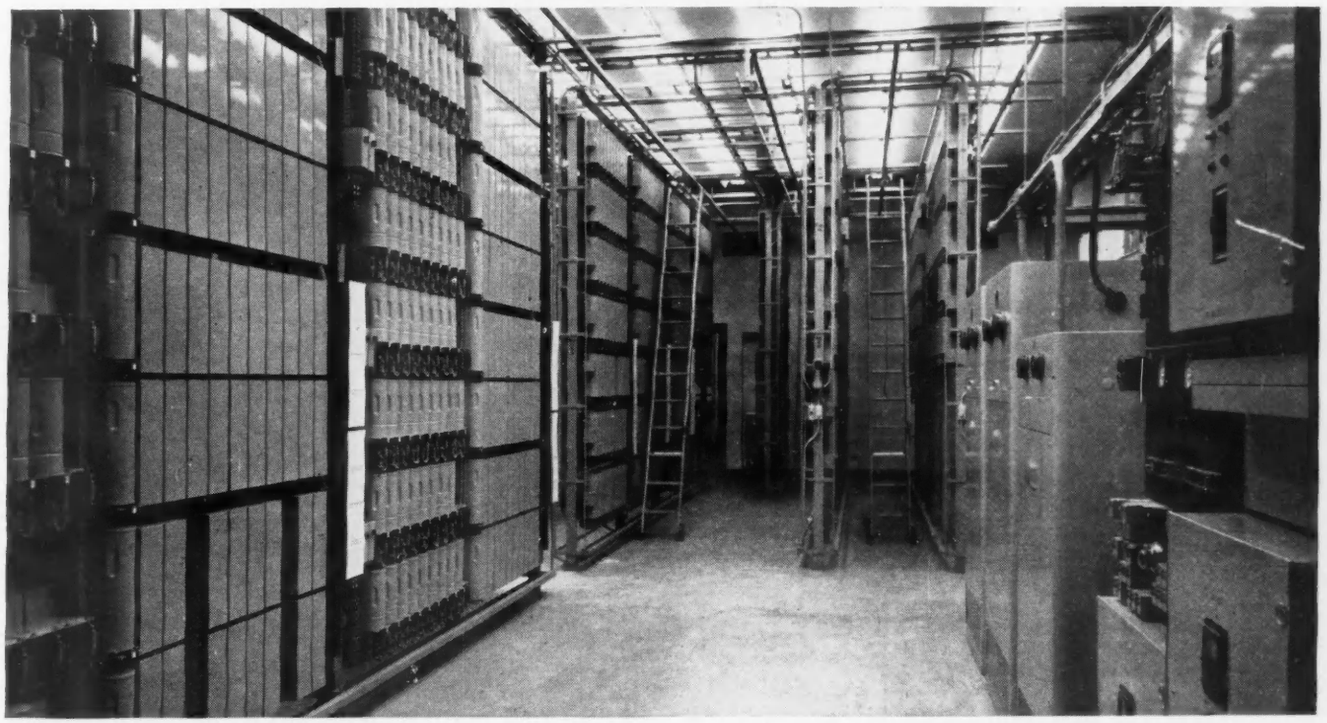
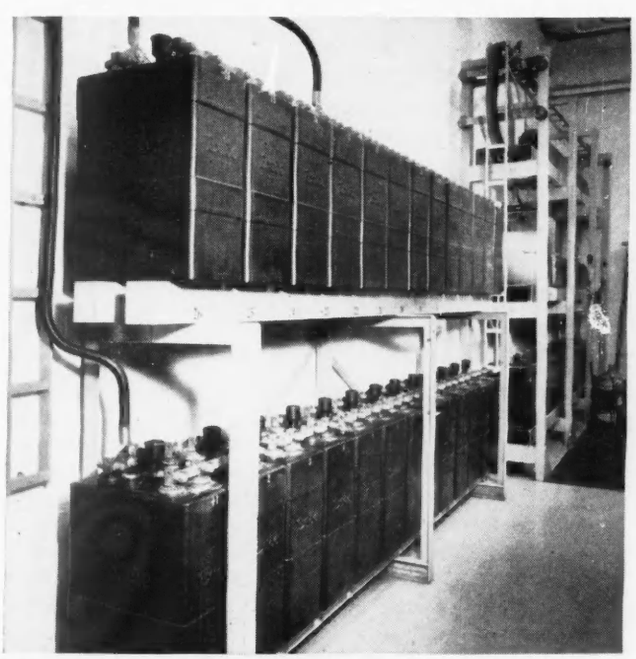
GUARANTEE OPERATION OF DIAL EQUIPMENT

. . . with dependable Exide telephone batteries!



THIS MODERN dial equipment installation was manufactured by the Automatic Electric Company for the Del Rio, Texas, exchange of the General Telephone Company of the Southwest. Exide telephone batteries were specified for the power plant. You will find that Exides are your *best buy in telephone batteries* with low costs for maintenance and depreciation. They are dependable, powerful and long lived.



DEPENDABLE standby power is provided by twenty-six FB-15D Exide batteries in monobloc rubber containers. Batteries are rated at 840 ampere hours, and are used for automatic full-float operation. Exide also makes Exide-Manchex and Exide-Tytex batteries, in sealed glass or plastic containers for every type of telephone service. Call your Exide sales engineer, write for details.

DEL RIO'S central office was converted to dial operation last year, and serves over 3,800 stations.

Your best battery buy...
FOR ALL TELEPHONE SERVICES Exide® **BATTERIES**

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

A

Telephone Engineer

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TELEPHONE and Management ENGINEER

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FRONT COVER

Instruction in all phases of commercial activity, including public relations, overtones of service, general tariff regulations, and the selling of long distance usage, extension telephone and other local equipment, was given to 125 supervisory employes of the Illinois Telephone Co. at a series of two-day training conferences held at Bloomington, Jacksonville and Paris. Pictured is a group of 40 employes from the Bloomington, Bushnell, Streator, and Pontiac districts in session at a Bloomington hotel. The training conferences were conducted by G. R. ARTHINGTON, B. C. SCHWEITZER, and LEON F. ROBERTS, of the general office staff, seated at the table, far left to right.

The National Telephone Magazine

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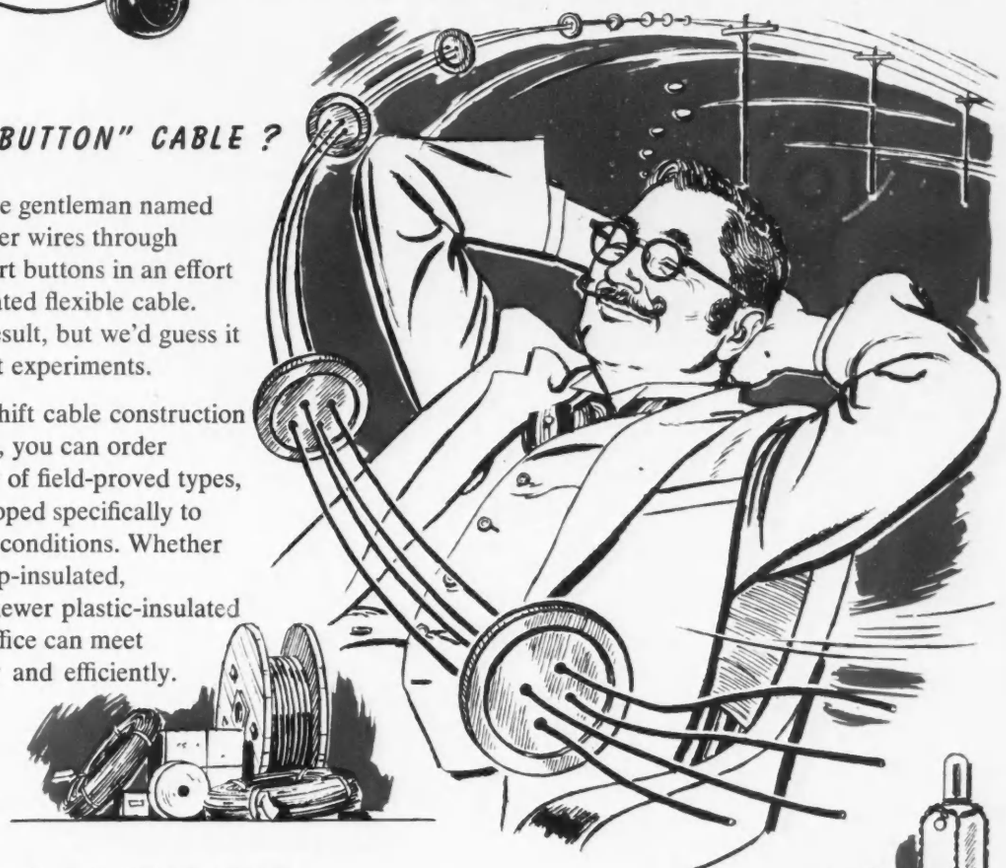
GraybaR TELEPHONE NEWS

EVER HEAR ABOUT DELANEY'S "SHIRT BUTTON" CABLE ?

Yes, in the '80's, an inventive gentleman named Delaney threaded bare copper wires through the holes in thousands of shirt buttons in an effort to produce a practical insulated flexible cable. History doesn't tell us the result, but we'd guess it was no worse than most first experiments.

Today, of course, make-shift cable construction is a thing of the past. In fact, you can order from Graybar a wide variety of field-proved types, all of which have been developed specifically to meet the needs of particular conditions. Whether you prefer conventional pulp-insulated, lead-jacketed cables or the newer plastic-insulated types, your local Graybar Office can meet your requirements promptly and efficiently.



TERMINALS KEEP PACE

Reliable type RU terminals are also available with a plastic stub for use with plastic-insulated cables. Completely weatherproof, this terminal can be installed either stub up or stub down. It is available in 6-, 11-, and 26-pair models.

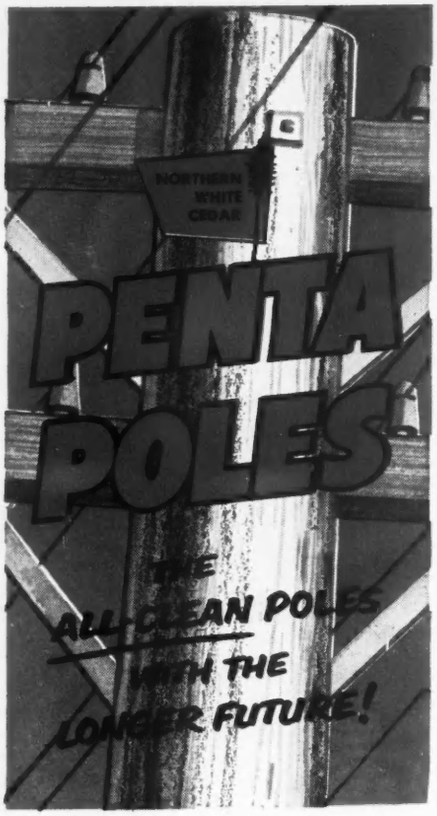
OFF LIMITS FOR LINEMEN

Checking insulation on the lines was a thankless, heartbreaking job in the early days of the telephone industry. A long handled brush and a bucket of pitch was the principal equipment. And after plastering insulators and splices on miles of line, the lineman was such a mess that he was barred from almost every tavern.

...A MODERN LINEMAN has a far more complex and scientific job to do. And, Graybar's nation-wide network of offices and warehouses stands ready to serve him with a complete line of splicing materials, terminals, special tools, and other accessories. 432-2210

Call Graybar first for... Everything in Telephone Supplies

GRAYBAR ELECTRIC CO., INC.
Executive Offices:
Graybar Building, New York 17, N. Y.
IN OVER 110 PRINCIPAL CITIES



Ask the lineman who installs them! He'll recommend P & H Northern White Cedar PENTA Poles . . . the poles that are safer, cleaner and easier to handle. Light weight Cedar plus top-to-butt PENTA treatment means poles that are always uniform, always dependable.

Before you buy . . .
Get the complete story!
WRITE FOR OUR FREE PAMPHLET
"Full-Length Treated Northern White Cedar P & H PENTA POLES,"
TODAY!

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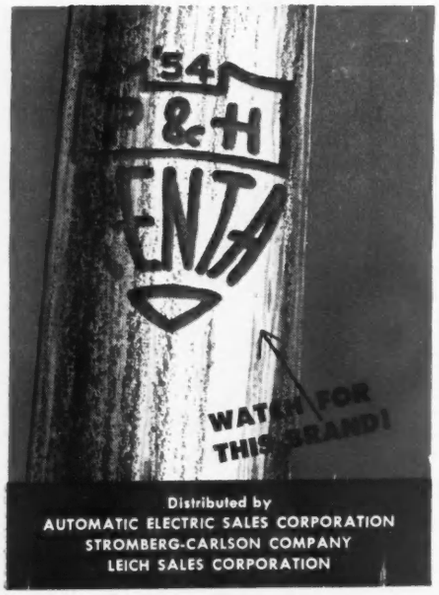

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—mostly about people

Across The Editor's Desk

Convention Report

THIS IS WRITTEN prior to convening of the national convention of the United States Independent Telephone Association. In fact this section is being printed during the convention and will contain the report of that meeting. To bring you this report the speakers and the association officers co-operated in every way to enable us to mail the issue the weekend after the adjuornment. In this edition you will find that our TELEPHONE ENGINEER camera was busy and our Staff burned the midnight oil as all reporting and pictures were completed and ready for the press the second day after adjournment. Its quite a trick — but it definitely is not done with mirrors!

Helpful Brochure

A. C. HERBERT, executive vice president of the *Pennsylvania Independent Telephone Association*, and his Staff are to be congratulated on the brochure they published last month and distributed at the Pennsylvania Industrial and Construction Exposition held in Harrisburg September 20-25. We understand over 300,000 people attended that one show and viewed the exhibit of the Pennsylvania association. The 4-page brochure depicted a map of Pennsylvania in color across the center spread picturing the exchange areas of the various Pennsylvania Independents. Information about the Independent telephone industry was attractively presented on the front and back covers.

"Tales of The '90's"

"The Rochester Engineer," published monthly by the *Rochester Engineering Society, Inc.* of Rochester, N. Y., featured one of *"Tales of the Nineties"* stories of *John P. Boylan* in its September issue. Readers of these stories that appeared exclusively in the TELEPHONE ENGINEER publications will remember the currently reprinted version titled "Progress in Reverse." Since Mr. Boylan started writing these stories they have been widely reprinted and published. Two printed editions have also been published.

Michigan Independents

THE INDEPENDENT telephone folks in Michigan are also deserving of praise for the 20-page booklet issued by the *Michigan Independent Telephone Association* which was distributed during their annual convention in September. *Fred Twigg*, the popular and able secretary of that group, sent us two of the booklets and we urge all association executives to view his handiwork. A number of state associations have been working on items of this type for the public and we heartily recommend the completed job of the Michigan association.

Value of Conventions

MUCH HAS BEEN said about the value of conventions. There are arguments pro and con as to their effectiveness. Telephone folks as a rule get more value from a convention than any other trade group we have ever known. The national convention reported in this issue is a good example. Very few trade associations have such active Committee participation with factual reports prepared and delivered for the good of the industry. The Program Committee presents an outstanding group of speakers and without fail they deliver outstanding papers. The manufacturers are said to be one of the most important features of our national convention. The year 1954 saw more manufacturers and suppliers exhibit than any year in past history. The 5th and 6th floors of the Conrad Hilton Hotel housing the telephone exhibits were educational within themselves. *We are proud to represent such an industry!*

Koiled Kords *

THE FINEST TELEPHONE CORDS MADE

KOILED KORDS are priced so that you can give your customers the extra convenience and luxury KOILED KORDS provide without any extra cost to them. At the same time, you make savings by cutting cord maintenance to an absolute minimum.

KOILED KORDS keep their spring-like shape and last indefinitely under the toughest conditions. They always spring back naturally to their original, neatly coiled length and continue to extend without fail to more than six times their retracted length.

THESE FEATURES ASSURE GOOD SERVICE

TINSEL CONDUCTORS, providing maximum flexibility, are protected with an essentially sulphur-free rubber insulation that is tough, flexible and eliminates the risk of tarnish and consequent noisy cords.

NEOPRENE OUTER JACKET, smooth, clean, good looking, reduces cord troubles to a minimum. Cannot fray and is unharmed by perspiration, humidity, oil, water, grease or acid.

KOILED KORDS TELEPHONE CORDS

Receiver Cords

Catalog No.	Description	
5001-1	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Kellogg No. 1000 series desk and No. 1100 series wall Masterphones.
5001-2	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Kellogg Nos. 900, 925, 9900, 9917 series and other Masterphones using No. 27-C handset
5001-3	3 Cond. Tinsel 4½′ extended 8½″ retracted	For North Electric, Stromberg-Carlson and Western Electric handset type telephones
5001-4	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Automatic Electric handset type telephones
5001-5	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Leich Electric handset type telephones Nos. 601, 605, 615, 70-A (Replaces Leich No. 36 cord)
5001-7	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Leich Nos. 100, 110 handset type telephones (Replaces Leich No. 52 cord)
5001-13	3 Cond. Tinsel 10′ extended 20″ retracted	Extra long cord for Western Electric, Stromberg-Carlson and North Electric handset type telephones.
5010-12	2 Cond. Tinsel 4′ extended 8½″ retracted	Receiver Cord for pedestal type telephones

Catalog No.	Description	
5011-1	3 Cond. Tinsel 4½′ extended 8½″ retracted	For Stromberg-Carlson No. 1243W, 1250W and 1443 handset type telephones
5020-7	4 Cond. Tinsel 4′ extended 8½″ retracted	Replaces Stromberg-Carlson WC-4J
5020-8	4 Cond. Tinsel 4′ extended 8″ retracted	For magneto type telephones
5020-47	4 Cond. Tinsel 5′ extended 10″ retracted	For Kellogg Masterphone magneto set
5022-1	4 Cond. Tinsel 4½′ extended 8½″ retracted	For Leich Electric No. 700 series handset type telephones
5022-2	4 Cond. Tinsel 4½′ extended 8½″ retracted	For Western Electric No. 500 series handset type telephones
5001-10	3 Cond. Tinsel 10′ extended 16½″ retracted	10′ Line Cord completely trimmed
5001-15	3 Cond. Tinsel 15′ extended 25″ retracted	15′ Line Cord completely trimmed
5001-25	3 Cond. Tinsel 25′ extended 42″ retracted	25′ Line Cord completely trimmed

ACTUAL SIZE

ORDER KOILED KORDS BY NUMBER FROM YOUR INDEPENDENT TELEPHONE SUPPLIER

© 1954

Koiled Kords INCORPORATED

Box K, New Haven 14, Connecticut

ALWAYS RETRACTS, NEVER GETS "BAGGY"

* TRADE MARK

PRINTED IN U.S.A.

BETTER!

Better...
Physically
Chemically
Electrically...

New, better exchange cable completely insulated and sheathed in modern plastics!

SUPERIOR *Telephone* CABLE

- LIGHTER WEIGHT
- NO PAPER TO GET WET
- LOWER INSTALLATION COST
- LESS TROUBLE FROM LIGHTNING
- NO LEAD TO FAIL FROM ELECTROLYSIS

Now, with Superior Telephone Cable you can count on lower installation costs and less maintenance and a great reduction in the number of outages due to lightning.

This newly developed Superior Cable is the result of the application of advanced engineering techniques to the most modern production methods.

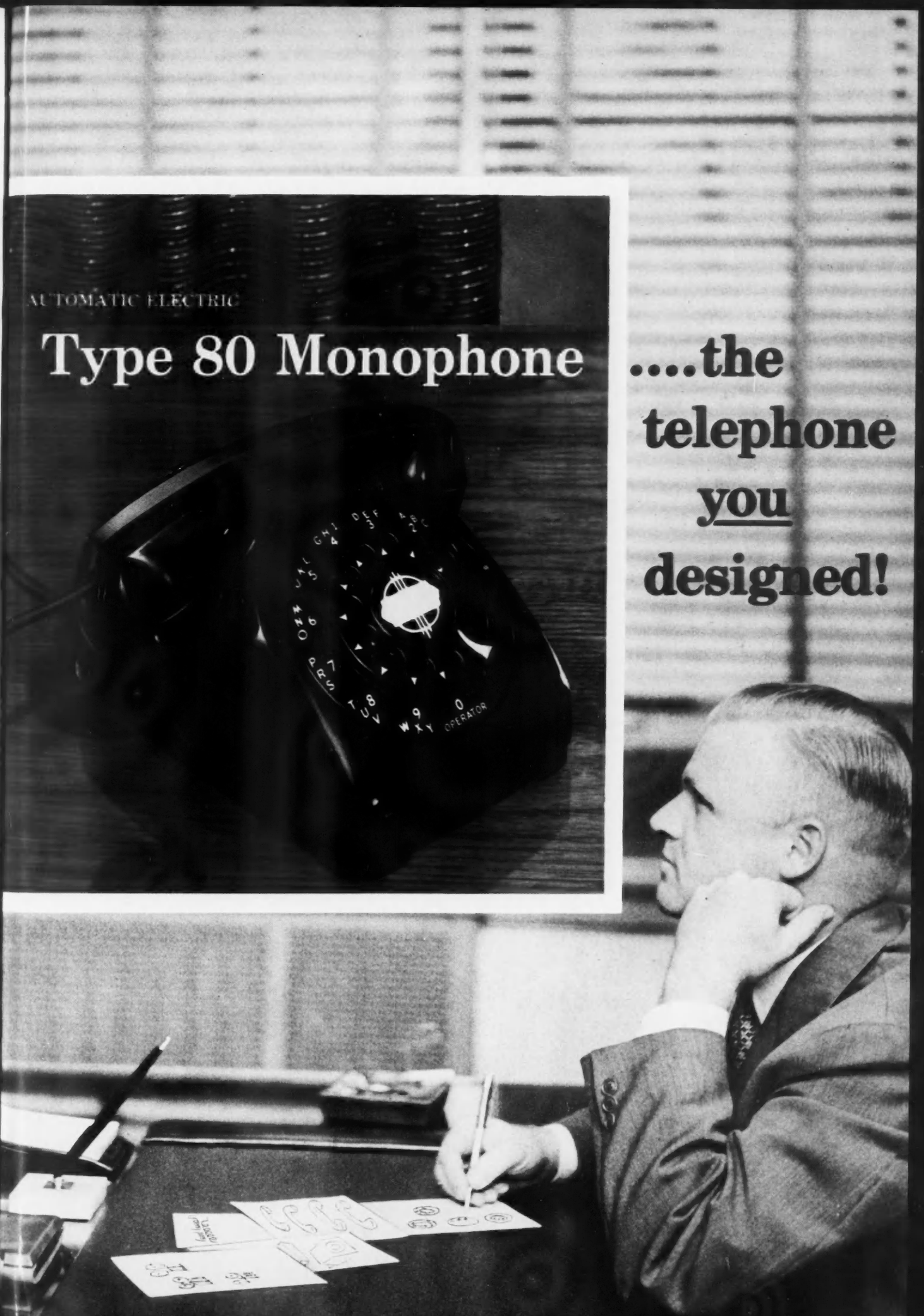
Superior Cable is factory-tested and is fully guaranteed to be satisfactory in design, materials and workmanship.

For long life and better service, use Superior Cable for all exchange area needs.

For more information and prices, write, wire or phone

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION · HICKORY, NORTH CAROLINA


AUTOMATIC ELECTRIC
Type 80 Monophone
....the telephone you designed!

easier to use

A telephone meets its *real* test at the hands of the user—and that's where Type 80 shines! To the user, the Type 80 Monophone offers:

→ And end to "off-hook" troubles—thanks to the ingenious "walking handset" (shown in action at right). The contours of the housing and the contours and balance of the handset have been worked out so the handset will automatically settle into its cradle. (You'll find it almost impossible to *make* it rest anywhere else on the housing!) With Type 80 Monophones, it's goodbye to "off-hook" trouble calls and annoyance.

→ A new short handset which weighs less, is far less tiring to hold than older types, and increases transmitter efficiency.

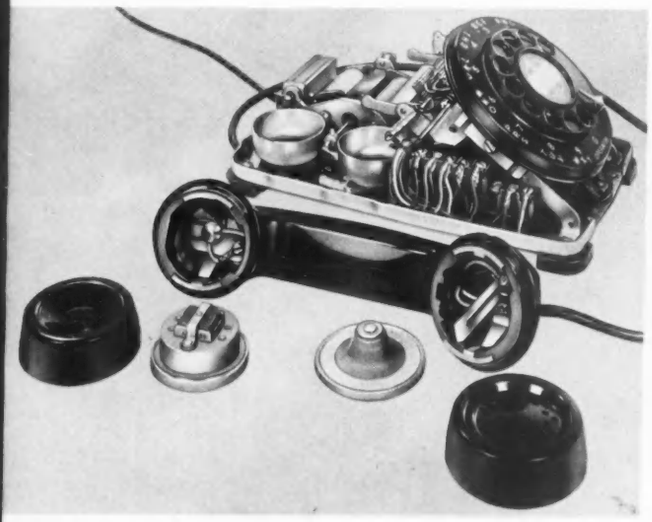
→ New dial angle and extended number plate make dial easy to see—make dialing easy and accurate.

→ Ample finger space provided, and lift grip placed near center of gravity to assure easy lifting and safe carrying.

→ A housing and handset that keep breakage 'way, 'way down. Molded of light, strong Tenite, they have enough "give" to stand the hard knocks of rough use.

the "walking handset": No matter where you hang it..

It's all you asked for.



insures "toll-grade" transmission

With an eye to toll revenues, today's telephone man builds his entire plant to give a high standard of toll service. The Type 80 Monophone *belongs* in such plants because the transmission network and components are designed to give maximum efficiency on typical Independent toll users' lines connected to typical toll circuits. Here's why:

→ Transmitter and receiver are non-positional capsule units. Tests show a flatter response curve—which means most life-like reproduction of speech.

→ New shorter handset brings transmitter nearer the user's mouth, boosting transmission volume.

→ High volume transmitter overrides line loss and line noises, particularly on long lines.

→ A simple adjustment enables installer to adjust line current for best transmission, whether the line is short or long—assures all-around efficiency on local and long-distance calls.

→ Anti-sidetone balance is substantially improved, due to use of a completely new induction coil and balancing network. It reduces sidetone over a wide variety of line conditions—causes user to adjust voice to level which will provide most effective transmission.

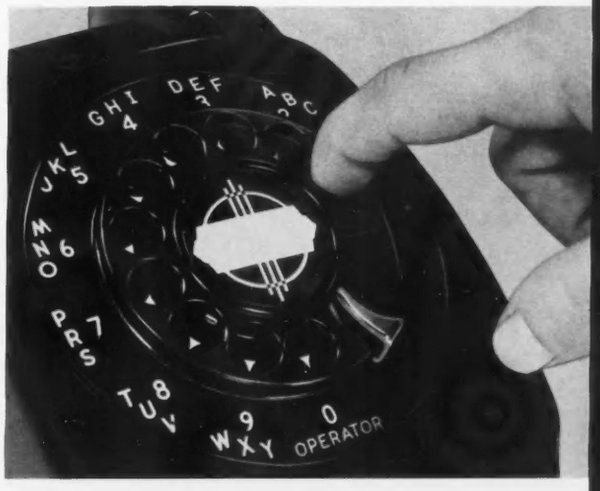
→ Improved ear-cap seals more effectively to the ear, reduces pickup of room noises.

...it simply slides...

...right into the cradle, where it belongs!

...and much more!

dialing is easier—and surer!



→ Fingerplate is lower on outer edge so it's easier to see the numbers from any position.

→ Arrowheads back of fingerplate point to numbers—make it easier to associate fingerplate holes with numbers.

→ Markings on extended number plate are big, clear, easy to see.

→ Twin contacts insure positive, dependable operation.

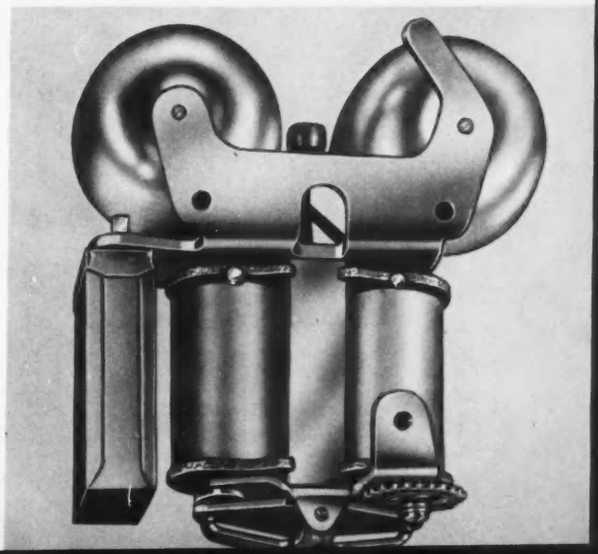
→ Spring mounting of dial makes dust-tight joint with housing.

→ Dust cover protects dial contacts from dirt and insects.

→ Non-skid feet on housing keep telephone from slipping while dialing is in progress; help avoid breakage and wrong numbers.

→ Uniform impulsing—always a feature of Automatic's dials—insures dependable switching, even over the longest lines.

even Automatic's outstanding ringers have been improved —so has the ringing!



→ Considerably increased volume of sound on higher ringing frequencies. Impedance is kept low at ringing frequency and high at talking frequencies.

→ Straight-line ringer equipped with handy volume control (optional) which can be adjusted by subscriber.

→ Ringer and ringing condenser mounted as unit—can be dismounted with a screwdriver. Pick a ringer and you've got the right condenser!

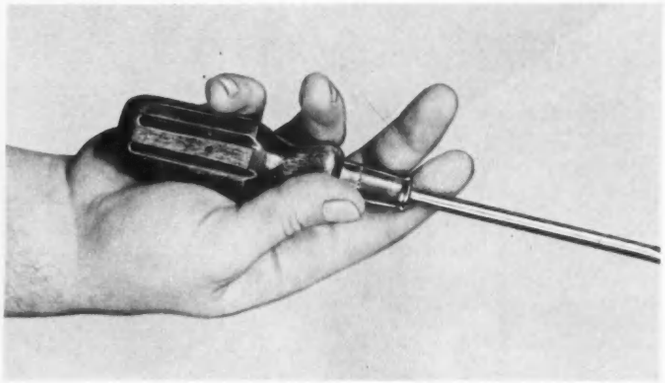
→ Pitch of gongs selected so ringing sound carries well at all ringing frequencies, even in relatively noisy surroundings.

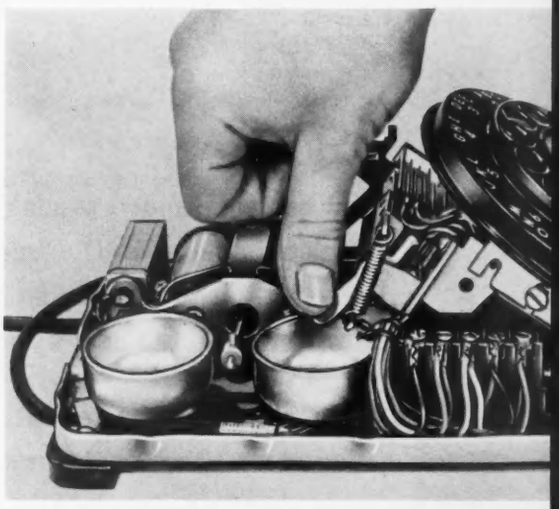
→ Cold-cathode tube supplied for 4-party superimposed ringing.

"installer's hooklock" avoids losing calls while telephone is being worked on

Here's a simple but wonderful idea! It's a time-saving, trouble-saving feature every practical telephone man will appreciate.

When an installer removes the housing of a Type 80 Monophone...





...he merely pushes the hookswitch lever down. The hookswitch springs remain actuated as if by the handset, while he goes about his work. No lines are tied up needlessly, and calls may be answered as they come in. Then...

here's your complete "Type 80 Tool Kit"

(very rarely required!)

There's no soldering needed on the Type 80 Monophone! Components are grouped in convenient assemblies which can be easily replaced, using only a screwdriver. All connections made with handy spade terminals—and again, a screwdriver is all you need!

Of course, there's a very little maintenance on Type 80—it's built to keep maintenance *down*. Here's why:

→ It's rugged, like all Automatic Electric products.

→ Balancing network components moisture-sealed.

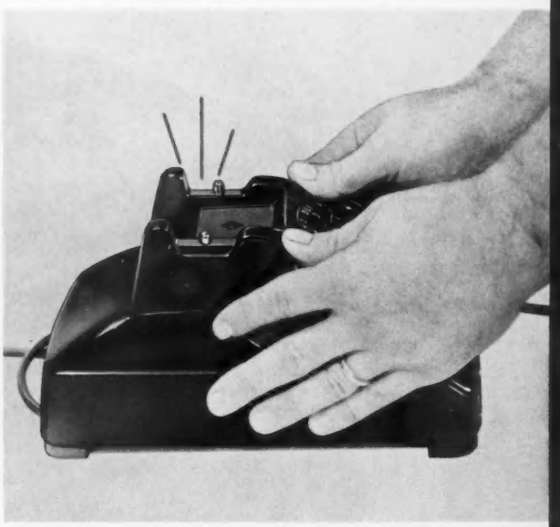
→ Twin contacts on hookswitch and dial.

→ All contacts protected from dust.

→ Long-wearing, kink-resistant, moistureproof cord.

→ Sturdy housing.

→ Sensitive, dependable ringers, such as customers have learned to expect in Automatic's telephones.



...when he replaces the housing, the hookswitch lever is *automatically* restored to its customary position. As handset is replaced on cradle, hookswitch seals itself against dirt and insects.

• • • When we decided to make a new Monophone, we went out and talked to telephone men in the field, to find out just what they wanted. These men were typical of today's progressive telephone men—men like *you*. That's why we call the new Type 80 Monophone "The Telephone YOU Designed."

Type 80 has unique features you will like—such as the "walking handset," the "installer's hooklock," distinctive letters and numerals on the number plate to avoid confusion in dialing—features that mark thoughtful and thorough design. You'll soon see how all Type 80's features can save you money on maintenance and repair—and how they can *make* money for you with fine service. Type 80 is the telephone you'll want!

order Type 80 Monophones today!

use this handy system
to find correct stock numbers

Example; Let's say you want
a standard Type 80 Monophone—
(1) without hooklatch
(2) with straight Neoprene cord
(3) with metropolitan dial
(4) with straight line ringer less adjustment wheel

Upon checking the table at right, you find that the code numbers which correspond to the foregoing specifications are:

(1)	(2)	(3)	(4)
N-80	**0**	**C**	**SL**

This is your stock number, and would be written on your order as

N-800CSL

item no.

		code no.
(1)	**Type 80 Monophone**	
	standard without hooklatch	N-80 ✓
	standard with hooklatch	N-81
(2)	**handset** with straight Neoprene cord	0 ✓
	with Extensicord	1
	with Koiled Kord	2
(3)	***dial** with 1-0 number plate	A
	removed (for manual—with dial hole cover)	B
	with ABC (metropolitan) number plate	C ✓
(4)	**ringer** straight line, less adjustment wheel	SL ✓
	with adjustment wheel	SA
	16.6-cycle harmonic	16
	20-cycle "	20
	25-cycle "	25
	30-cycle "	30
	33.3-cycle "	33
	40-cycle "	40
	42-cycle "	42
	50-cycle "	50
	54-cycle "	54
	60-cycle "	60
	66-cycle "	66
	66.6-cycle "	67
	with vacuum tube for superimposed ringing	VT

*The Type 80 Monophone is also available equipped with station identity dials for use with Types A and B SATT (Strowger Automatic Toll Ticketing) Systems. Full information will be supplied on request.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

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A NEWLY PERFECTED METHOD OF

SPLICING ALL-PLASTIC

ANSONIA® Ankoseal® CABLE

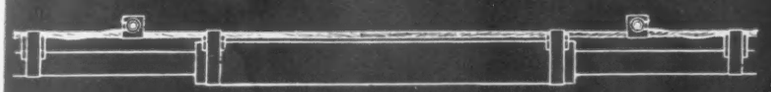


Diagram of Straight Splice.

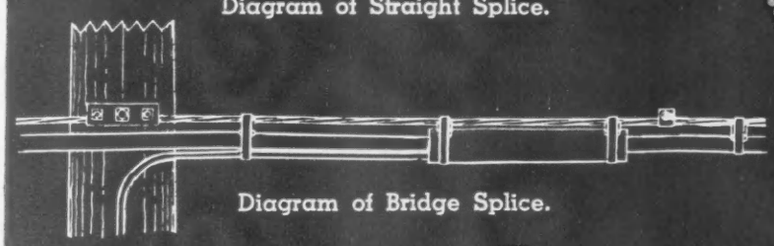
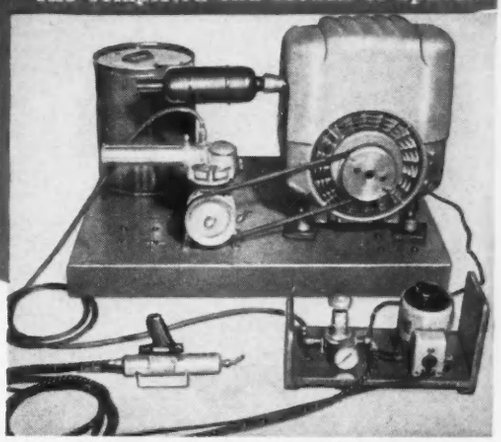


Diagram of Bridge Splice.

The completed end section of Splice.



Equipment—generator, air compressor, pressure regulator, power stat, welding gun and connections. The complete unit may be purchased or rented.

Ankoseal Cable and Hot Gas Welding Splicing

To users of Ankoseal Cable there is now offered for the first time a hot gas welding splicing procedure that will extend the opportunities of utilizing Ankoseal's advantages. It is applicable to straight, bridge and split-sleeve type splices.

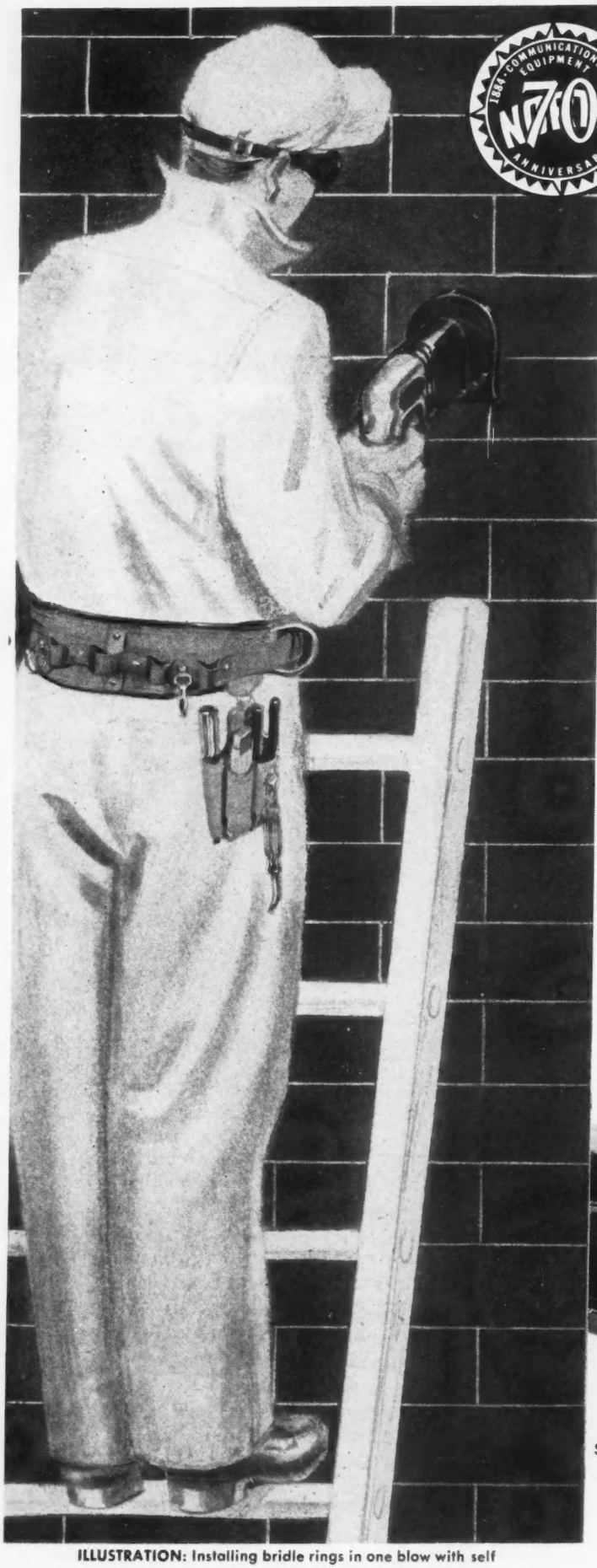
This technique is not intended to replace the eminently satisfactory Ankoseal Tape and Lead Sleeve Type Splices but is offered as *another way* to do the job that may be preferred by some. It is a thoroughly perfected technique in which extensive engineering, research and development by Ansonia Engineers have been amply confirmed by actual field installations of Ankoseal Cable. The completed splice may be pressure (flash) tested.

A complete package is offered the user by Ansonia consisting of; 1. necessary equipment – portable mounted for field use, 2. required materials, 3. manual of procedure, 4. instruction of personnel in the simple technique.

Write for Manual of Procedure and any additional information desired.

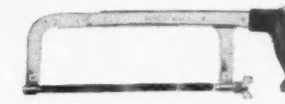
THE ANSONIA WIRE & CABLE COMPANY

Ansonia, Connecticut **Phone — Ansonia 4-3306**



Where

Stapling Guns
MG T-2

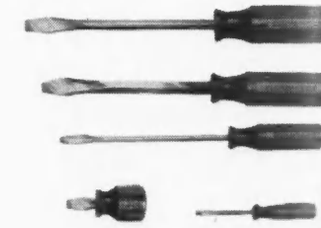


Starrett Hack Saw Frames
SC 153

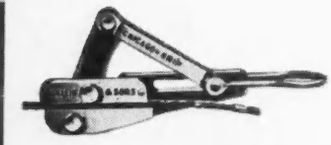
Greenlee Angle Screwdrivers
SS 727

Stanley Bit Braces
SD 923

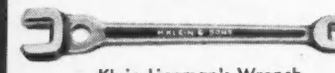
Miller Skinning Knives
SE 75 K



Stanley Victor Screwdrivers
SS 2006-7-8-12-10

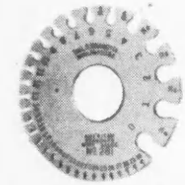


Klein Chicago Heavy Cable Grips
SG 1628-16

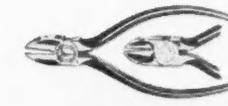


Klein Lineman's Wrench
SV 3146

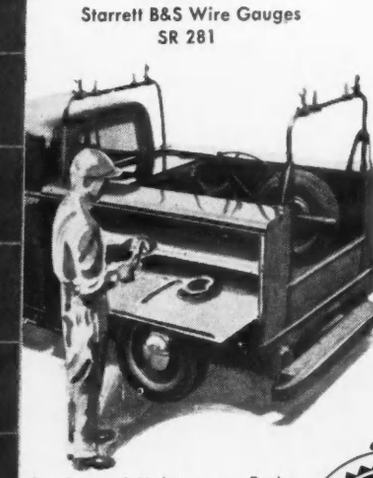
Klein Long Nose Side Cutting Pliers
SP 203



Starrett B&S Wire Gauges
SR 281

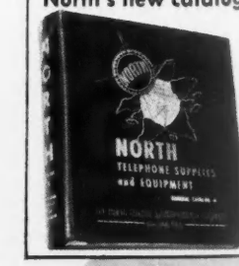


Klein Oblique Cutting Pliers
SP 252 SW



Service and Maintenance Body
Series 44

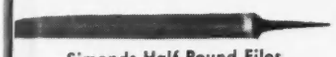
You'll find them all in North's new catalog.



NORTH

ILLUSTRATION: Installing bridle rings in one blow with self powered Ramset Tool. Cat. No. S 122. Miller Telephone Linemen's Belt being worn . Cat. No. SE 93 2½S.

QUALITY COUNTS



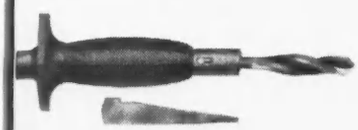
Simonds Half Round Files
SF 5

Yankee Automatic Push-drills
SD 41

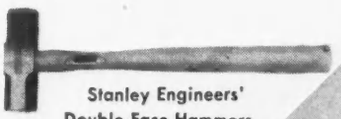
Lufkin Mezurall
Tape Rules
SR C9210

Greenlee Socket Framing Chisels
SS 261

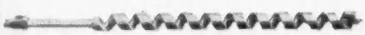
Yankee Spiral Ratchet Screwdrivers
SS 30A



Diamond C Drill Holder
SD 755

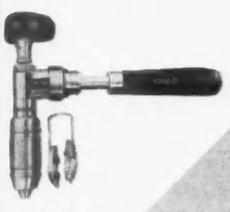


Stanley Engineers'
Double-Face Hammers
SH 392



Ship Auger Bits
SD 64 and 64 J

Nicopress Splicing Tools
HF 31 DC 2



Stanley Corner
Bit Braces
SD 984

If you measure the value of small tools using cost as your yardstick, you may be apt to lose sight of their time, money and energy saving importance.

Small Tools can speed up or delay a job; they can add to or subtract from the efficiency of your crews; and, they can increase or decrease your revenue.

Your guarantee of high quality small tools with long-lived dependability will be found in the time-tested national brands illustrated in Section 10 of North's New Catalog, and carried in stock at all North Warehouses for immediate delivery.

Available in Canada through ERICSSON TELEPHONE SALES of CANADA, Ltd. 1410 Stanley Street Montreal 2, P.Q.

Buy Your SMALL TOOLS *from* NORTH

THE NORTH ELECTRIC MANUFACTURING COMPANY

601 South Market Street, Galion, Ohio,

AMERICA HAS ANOTHER "MODERN" EXCHANGE

CLIFFORD CUTS OVER TO

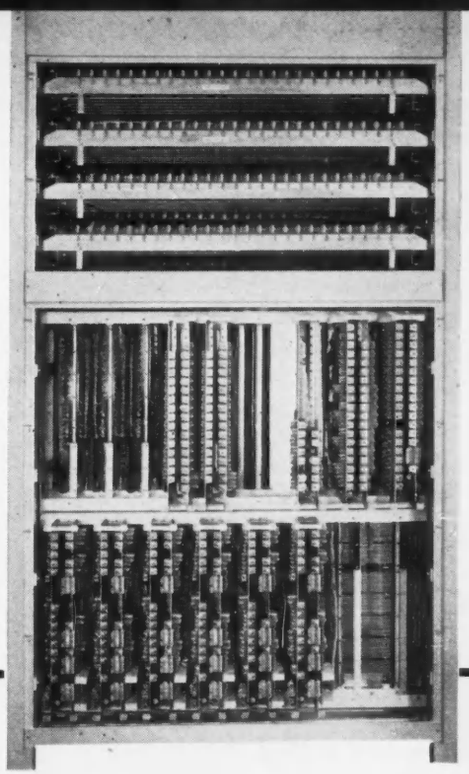
The Clifford Dial Exchange Building.

Mr. Earl Tourje, Secretary and General Manager, throwing the switch to set the Clifford Dial Exchange in operation.

Left to right: Joseph L. Debevec and Boyd H. Todd, Installers and Trouble Shooters, with the dial equipment.

The Board of Directors of the Company, with their wives, left to right: Robert J. Spencer, Director, Mrs. Spencer; Boyd H. Todd, Treasurer and Assistant General Manager, Mrs. Todd; Mrs. Edward Maile, Edward Maile, President and Plant Superintendent; Mrs. Earl Tourje, Office Manager; Earl Tourje, Secretary and General Manager; J. D. Brennan, Director.

KELLOGG *Crossbar*



North-Eastern Pennsylvania Telephone Co. Converts Its Clifford Exchange to KELLOGG CROSSBAR— Another Example of Progress Today with an Eye on Tomorrow

Subscribers in Clifford, Pa., are now getting the most modern service that any telephone exchange can offer. Reason: The progressive management of the North-Eastern Pennsylvania Telephone Co. has installed the most modern dialing equipment ever manufactured — Kellogg Crossbar.

Unequaled in speed, capacity or economy, Kellogg Crossbar has proved its superiority in actual exchange operation, in a wide variety of installations. Wherever it has been installed, it has resulted in improved subscriber service, increased profits, lower operating and maintenance costs.

Kellogg Crossbar not only gives satisfying service today, but assures easy, quick and economical expansion in the future. It grows with your needs... from 100 or less lines to ten thousand... and it's ready for nation-wide toll dialing.

Here are the major benefits that Kellogg Crossbar offers you:

- No moving parts—daily maintenance not required
- Drawer Mounted Switches
- Switches Individually Covered
- Lower Installation Costs for Additions
- No Multiple Wiring
- Full Station Intercept
- Factory Wired
- PBX Grouping Service (without using consecutive numbers)
- Maximum Expansion
- Instantaneous Seizure of Paths Without Hunting
- High Traffic Capacity
- Extra Long Life

GET ALL THE FACTS ON KELLOGG CROSSBAR NOW! Write for your free copy of this Kellogg Crossbar brochure!

KELLOGG — DIVISION OF IT&T — KELLOGG SWITCHBOARD AND SUPPLY COMPANY

A Division of International Telephone and Telegraph Corporation

SALES OFFICE: 79 WEST MONROE STREET, CHICAGO 3, ILLINOIS

Warehouses: Chicago 38 • Kansas City 1 • Mansfield, Ohio • St. Paul 4 • Dallas 2 • San Francisco 3

Branch Offices: New York 7 • Portland 5 • Los Angeles 13

Export: International Standard Electric Corporation, New York 7, N. Y., U. S. A.

KELLOGG

Your nearest Kellogg shipping point is never far away — KELLOGG'S six conveniently located warehouses and more than 100 supplier distribution points throughout the country assure you fast, economical delivery of guaranteed line supplies.

Your Nearest Kellogg Shipping Point Is Never Far Away!

KELLOGG DIVISION OF IT&T

KELLOGG SWITCHBOARD AND SUPPLY COMPANY
Sales Offices: 79 W. Monroe St., Chicago 3, Ill.
A Division of International Telephone and Telegraph Corporation

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BRANCH WAREHOUSES AND OFFICES:

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"Midway Area"
St. Paul, Minnesota

1663 Mission Street
San Francisco 3, California

4501 Truman Road
Kansas City 1, Missouri

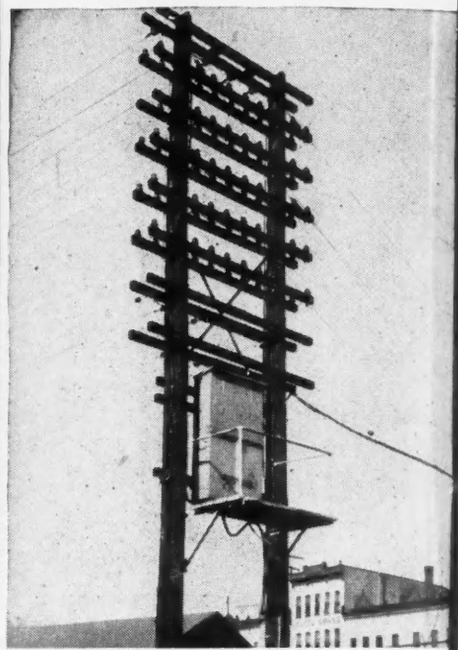
1515 Turtle Creek Blvd.
Dallas 2, Texas

1555 West Fourth Street
Mansfield, Ohio

BRANCH OFFICES:

406 S. Main Street
Los Angeles 13, Calif.

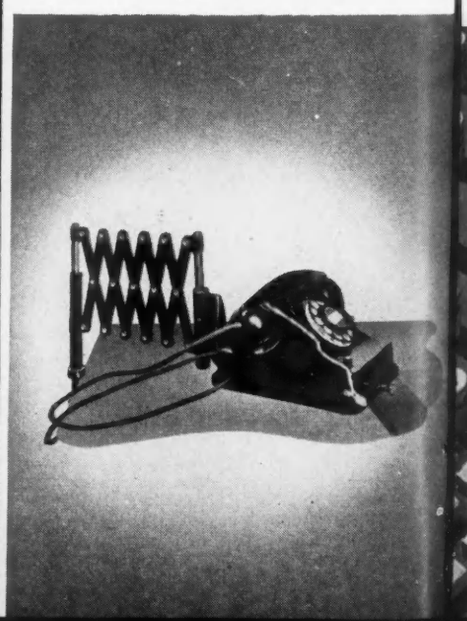
720 S. W. Washington Street
Portland 5, Oregon



Economy in Overhead Construction is assured when crossarms made by the CONTINENTAL CROSS-ARM COMPANY, INC. are a part of your wire and pole installations. Fully seasoned American woods — built to sound standards of dependability.

•

Adds to the Convenience of Your Telephone — The Glidex Telephone Bracket saves desk space —keeps phone in easy reach yet out of way. Various types of mountings available for attaching to wall, side of desk, and table edges. GLIDEX CORPORATION.



HEADQUARTERS FOR SUPPLIES

Save Drop Wire with the Cook Party Line Junction. Ideal for terminating and protecting the cable pair drop, the cable pair, and distributing four party line drops. Porcelain base, with zinc non-corrosive cover. COOK ELECTRIC COMPANY.

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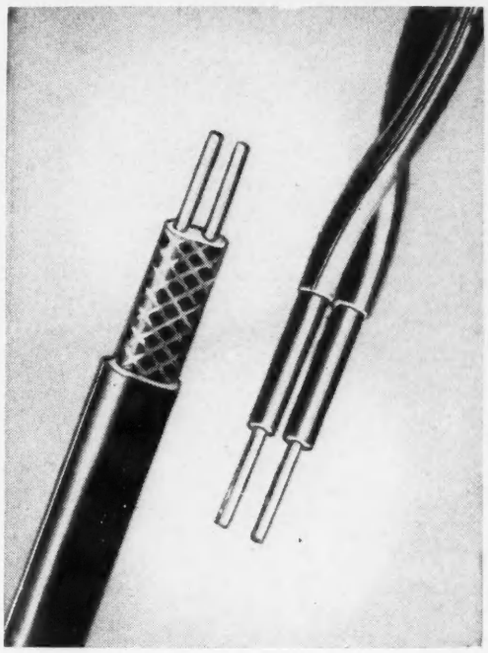
Uniform High Quality is the characteristic of all PORCELAIN PRODUCTS, INC., Knobs and Tubes . . . all especially produced to exacting specifications and made to guarantee top quality in insulation and top performance for telephone installation.



Lasts 30% Longer! Long service life and low plant costs go hand-in-hand with the installation of ENDURPRENE—The Neoprene Drop Wire available in Copperweld and Bronze. Flexible, easy to handle. GENERAL INSULATED WIRE WORKS, INC.

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Time Proven—for 60 years Exide Batteries have been serving telephony! The Manchester positive plate with its button type construction provides long life . . use Exide Manchex for all your battery requirements. ELECTRIC STORAGE BATTERY CO.

Long Life Expectancy is built into Southern Pine Poles and Crossarms. Carefully and thoroughly treated by AMERICAN CREOSOTE WORKS, INC., these poles have the extra durability required for dependable service under toughest climatic conditions.

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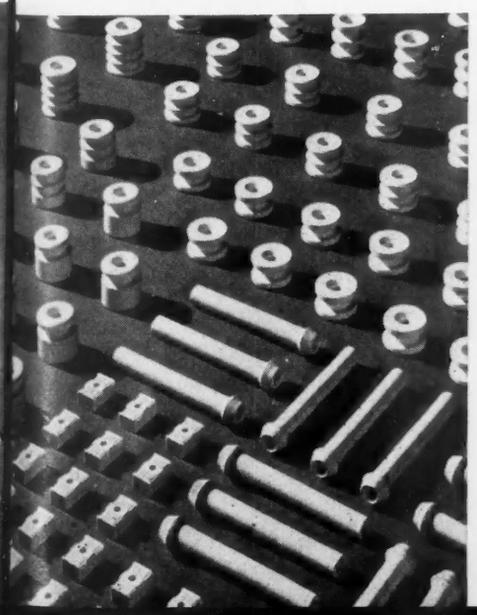
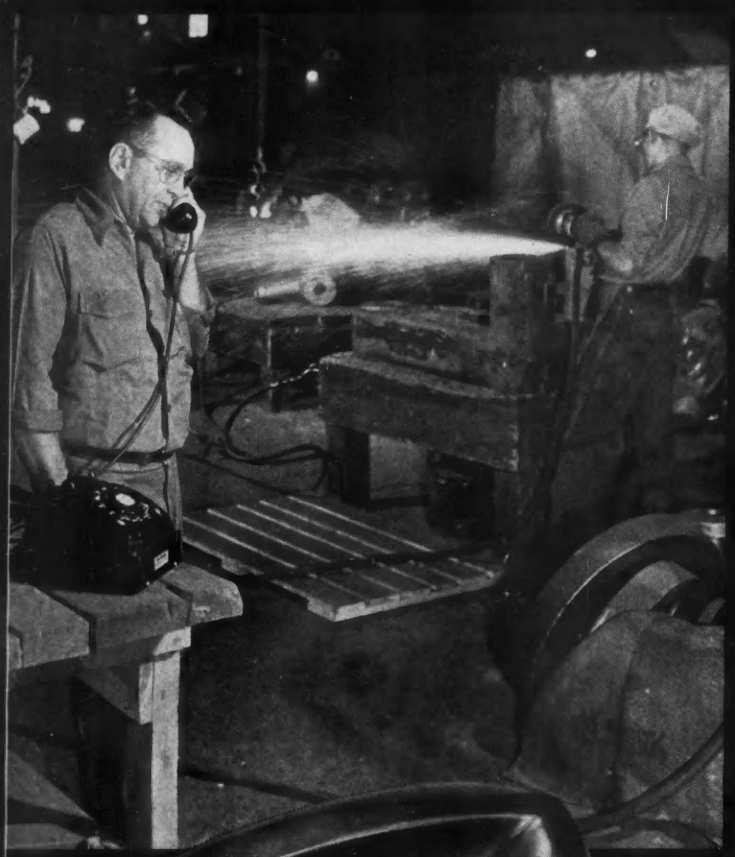
The Expanding Plates and Spreader Arms of Everstick Anchors insure 100% safety and maximum holding power under excessive strain. Ribbed base plate allows anchor to be locked solidly on rod. Quickly installed. Made by EVERSTICK ANCHOR CO.



How to turn **NOISE** *into* ***REVENUE***

tell subscribers about GAI-PHONE

(pronounced GUY-phone)



the electronic telephone substitute for soundproof booths in areas of extreme noise

Remember the old phrase, "Noisy as a boiler factory"? Well, there's a wonderful new product which can twist that phrase into one exactly opposite—"As quiet as using a GAI-PHONE in a boiler factory!"

It's true! A special transmitter in a special circuit creates a "Zone of Quiet" around the handset, allowing clear, interference-free voice transmission, even a few feet away from boilers, turbines, motors and the like.

The instruments (an adaptation of our "1500" series) also provides control of *receiver* volume and has an adjustable sidetone level, going even below audibility. It can also be used effectively on long lines, without repeaters.

Best of all, the GAI-PHONE—desk or wall mounted—costs considerably less than a conventional subset and soundproof booth.

Want to know more? Just speak up!

Stromberg-Carlson®

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Branches at Atlanta 3, Chicago 6, Kansas City 8, San Francisco 3 • Manufacturing Branch, Dallas

Bottom view with base cover removed

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*
ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

Dear Sir: October 15, 1954

NORTH DAKOTA MUTUAL RECEIVES 3rd RE\ FARM TELEPHONE LOAN:- Reservation Mutual Aid Tel. Corp., Parshall, N. D., has received its 3rd farm telephone loan from REA. The organization, allocated another $109,000, now has loans totaling $1,007,000 from REA. The most recent loan will be used to finance purchase & remodeling of headquarters building, construction of 39 miles of additional line & facilities to serve 11 subscribers not previously covered. Company expects to serve 1429 subscribers & 100 switching customers.

A 4th loan of $66,000, bringing total of grants to this company to $868,-000, was approved by REA for Wilkes Tel. & Electric Co., Washington, Ga., which will use new funds to finance construction of 23 additional miles of line necessary under revised plans. Company plans new & improved service for 2582 subscribers in 3 co\nties. Completed system will consist of 511 miles of line.

KENTUCKY COOPERATIVE GETS $886,000 REA FARM PHONE ALLOCATION:-The Twin County Rural Tel. Cooperative Corp., a new co-op located in Hodgenville, Ky., has been granted a Rural Electrification Administration loan of $886,000 to buy existing facilities & add others to serve 4 counties in the state. With the funds, the co-op will buy facilities serving 308 subscribers & 600 switchers. It is planned eventually to serve 1944 subscribers & switchers over 420 miles of line with 4 dial central offices.

A 2nd loan of $318,000 was made by REA to the Breaux Bridge (La.) Tel. Co., to serve 637 subscribers not included in the 1st loan of $253,000, approved in July, 1951. The two loans will enable company to serve 1838 subscribers, through 4 dial central offices.

AGRICULTURAL CENSUS TO ASCERTAIN NUMBER OF FARM TELEPHONES:-Up-to-date figures on number of telephones on the nation's farms will be gathered by Bureau of Census in 1954 census of agriculture, to be taken during October & November, it was announced last month. There is no way to determine when results will be available, but past experience indicates that it may be several months before all returns are processed & tabulated.

FREE LITERATURE:-Ansonia Wire & Cable Co., Ansonia, Conn., has released new booklet describing complete process of "Hot Gas Welding Splicing Procedure For Ankoseal Cable." Booklet is offered free to industry members . . . . Miller Equipment Co., Franklin, Pa., has issued new catalog describing its complete line of safety equipment. Volume is packed with data of value to industry members. Its yours for the asking.

CO-OP ACTIVITIES:-E. W. Rice, mgr. of South Central Tel. Assoc., Inc.

announced co-op would make headquarters at Medicine Lodge, Kans. South Central recently acquired Inka (Kans.) Tel. Exchange.

EXPANSIONS & IMPROVEMENTS:-Texas Tel. Co. plans to convert Sherman, Texas, exchange to dial by Jan. 1, 1957 . . . . Home Tel. Co. completed dial cutover at Grand Meadow, Minn. Mgr. Vies Martinsen said new system cost $65,000 . . . . Wade H. Creekmore, pres. of Calhoun City (Miss.) Tel. Co., announced company has completed its dial conversion project . . . . General Tel. Co. of Ill. completed dial conversion project at Marissa, Ill.

Atkins (Ia.) Co-op Tel. Co. completed $30,000 dial conversion project . . . . Mgr. N. N. Spillet announced Brooklyn (Ia.) Mutual Tel. Co. has moved into its new exchange building . . . . Geary (Okla.) Tel. Co. has been converted to dial operation. Mgr. John Robertson reports project cost $69,000 . . . . Western Tel. Co. converted Covelo, Calif. exchange to dial. Otto Kaser is mgr.

Wes Hacket, owner of Orleans (Mich.) Tel. Co. reports Orleans exchange is being converted to dial . . . J. C. Parks, owner of Prairie Grove (Ark.) Tel. Co., announced completion of dial cutover at Prairie Grove . . . . E. B. Zerwas of the Manning (Ia.) Tel. Co reports progress on company's $105,000 dial conversion project . . . . Tri-County Tel. Assoc., Basin, Wyo., planning $278,130 construction program . . . . Thermel Belt Tel. Co. has completed dial cutover at Landrum, La.

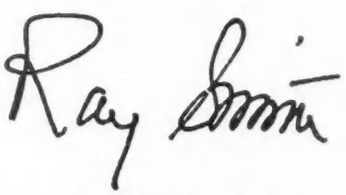
Lawrence (Mich.) Tel. Co. announced completion of its $230,000 dial conversion program.

INCORPORATIONS:-Clyde Tel. Co., Inc., Howe, Ida., incorporated as non-profit co-operative . . . Southern Tier Tel. Co., Barton, N.Y., granted charter of incorporation.

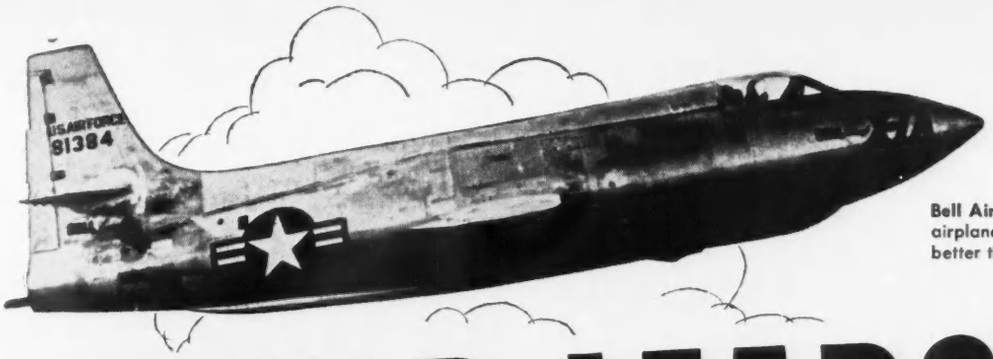
TELEPHONE TOTAL IN US REACHED 51,340,000 AT HALF-WAY MARK OF 1954:-At end of June, number of telephones in service in United States had reached total of 51,340,000, with 42,158,000 of these served by Bell System, according to statistical report issued by American Tel. & Tel. Co. Bell System total did not include 1,344,000 telephones of non-controlled Southern New England & Cincinnati & Suburban Bell companies.

At halfway mark of 1954, Bell System had invested in plant $13,593,-655,000 of industry total of $15,275,000,000 while operating revenues for 1st 6 months were $2,326,662,000 and $2,575,000,000, respectively.

UNTEREINER NAMED TO SUCCEED MITTELSTAEDT ON CALIF. COMMISSION:-Ray Edward Untereiner, Pasadena, has been named to California Public Utilities Commission to succeed R. E. Mittelstaedt, who retired May 1. Appointment of Mr. Untereiner is for term ending Jan. 1, 1959. Mr. Untereiner, 56, is an economist who has been serving on faculty of California Institute of Technology & as consultant. From 1943 to 1954, he was an economist for National Association of Manufacturers.



Ray W. Smith, Editor



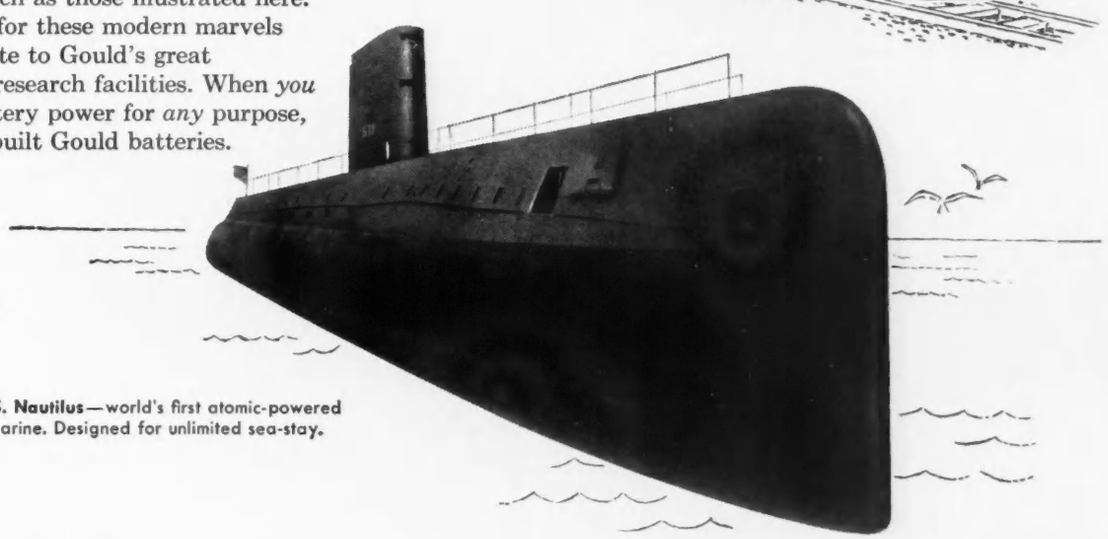
Bell Aircraft's X-1A —world's fastest airplane that broke the sound barrier at better than 1600 miles per hour.

GOULD LEADS

ON LAND, ON SEA, IN THE AIR!

Missouri Pacific Railroad's Eagle —the modern streamlined train that meets tomorrow's rail transportation needs.

DEPENDABLE storage battery power plays an important role in the record-making performance of great new scientific achievements, such as those illustrated here. Gould Batteries for these modern marvels is dramatic tribute to Gould's great engineering and research facilities. When *you* need storage battery power for *any* purpose, choose research-built Gould batteries.

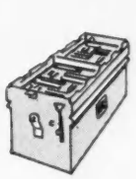


U.S.S. Nautilus—world's first atomic-powered submarine. Designed for unlimited sea-stay.

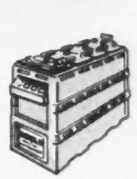
GOULD
Batteries

GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

For Railroad Air Conditioning and Lighting


For Mine Shuttle Cars and Locomotives

For Electric Industrial Trucks


For Diesel Locomotive Starting

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from the Capitol

Washington Bureau Reports

By ROLAND DAVIES & FRED HENCK

***GEORGE C. McCONNAUGHEY named FCC chairman. New commissioner was chairman of Ohio Public Utilities Commission from* VTCT *to* VTDE *and NARUC president in* VTDD-DE**

APPOINTMENTS to the Federal Communications Commission, including the latest — designation of George C. McConnaughey of Ohio as a Commissioner and the new Chairman of the agency — have definitely given the FCC a "new look" under the administration of President Eisenhower.

Although, of course, many Independents are not under the direct authority of the FCC, its actions frequently affect all communications organizations very vitally, and the change in its composition is worth more than passing interest.

The three selections for the Commission made by President Eisenhower bear a striking similarity — definitely good qualifications for the job, but no past direct experience with FCC activity. This gives the FCC a group of members with competence to do the job, but with something of a fresh viewpoint.

Mr. McConnaughey is hardly a stranger to regulation. Chairman of the Ohio Public Utilities Commission from 1939 to 1945, and President of the National Association of Railroad & Utilities Commissioners in 1944-45, he also has specialized in regulatory law during his long career as a practicing attorney. As Chairman of the Renegotiation Board, an agency which looks into defense contracts to see if the contractors are making a reasonable profit but no more, he has administrative and other problems similar to those he will face on the FCC.

Also drawn from state commission ranks was Commissioner John C. Doerfer, who was Chairman of the Wisconsin Public Service Commission before he came to Washington.

The other Eisenhower appointee, Robert E. Lee, had no direct regulatory experience before, but he has demonstrated that his career as an accountant, with the Federal Bureau of Investigation, and as Director of Surveys & Investigations of the House Appropriations Committee has well fitted him for his service on the Commission.

Coming Conventions

North Carolina Telephone Association, Carolina Hotel, Pinehurst, Oct. 18, 19.

South Carolina Telephone Association, Lafayette Manor, Myrtle Beach, S. C., Oct. 25, 26.

Virginia-West Virginia Telephone Association, Roanoke Hotel, Roanoke Oct. 28, 29.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Nov. 4, 5.

Alabama-Mississippi Telephone Association, Thomas Jefferson Hotel, Birmingham, Ala., Nov. 8, 9.

South Dakota Telephone Association, Sioux Falls, Nov. 11, 12.

Georgia Telephone Association, Bon Air Hotel, Augusta, Nov. 12, 13.

Florida Telephone Association, Soreno Hotel, St. Petersburg, Nov. 15, 16.

It was Commissioner Lee who pointed out in a speech recently that he thought his lack of direct radio-communications experience prior to his FCC service did him a lot of good. He came to the job with no preconceived ideas, he pointed out, and his very lack of background in the field enabled him to question established practices, rather than accept them, so that he has been able to reach conclusions as to which accepted ideas are good and which could stand modification.

Obviously, it would be a disadvantage to have a Commission entirely composed of neophytes in its work. But there are still two members of the FCC — Rosel H. Hyde and E. M. Webster — who have spent virtually their entire adult lives in the service of the Commission and its predecesors, and another — Robert T. Bartley — who served with the FCC in the middle 30's before moving elsewhere until he returned as a Commissioner. This blending, it is felt by observers, lends a nice balance to the FCC lineup.

Busy Time Ahead

THERE CAN BE no question but what the Commission is going to need balance in the months ahead, as it passes over the hump in the widely-publicized television gold rush and moves into an era which may be

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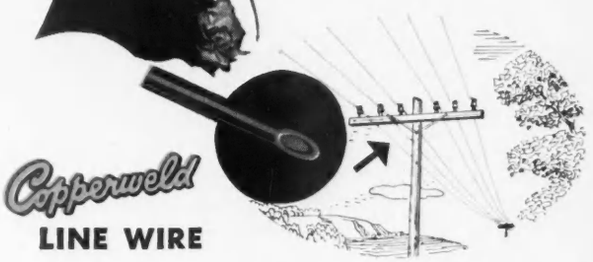
TO KEEP LINE COSTS DOWN



Copperweld LINE WIRE

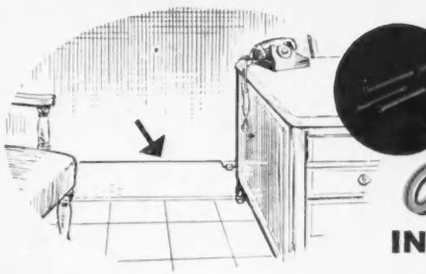
Due to its thick, Molten-Welded copper covering, Copperweld* provides better voice and high frequency transmission characteristics than any other high-strength conductor. And it has the strength of steel. Non-rusting, light in weight, easy to string, it's unequaled for long-life, long-span construction.

Copperweld GRIP-FLEX 38 TIES

The preformed Copperweld Grip-Flex38 Tie assures uniformity of construction—reinforces the conductor over the entire length of the tie—and prevents chafing of conductors. It's strong, non-rusting, simple in design, easy and inexpensive to apply. Made for line wire sizes from No. 12 Awg to No. 4 Awg.

Copperweld DROP WIRE

With a breaking strength of 400 pounds for the pair, No. 18 Copperweld is the strongest drop wire made. This greater strength means greater mechanical safety—provides the added stamina to withstand heavy ice and wind loads. And its uniform copper covering assures excellent conductivity and rust resistance.



Copperweld INSIDE WIRE

Only Copperweld Inside Wire offers you the advantages of lower cost, ample conductivity and permanence, plus greater strength to withstand repeated flexing and long duct pulls. Used by the world's leading telephone systems, it's non-rusting, pliable and easy to install. Available in 2, 3 or 4-wire twisted or jacketed construction.

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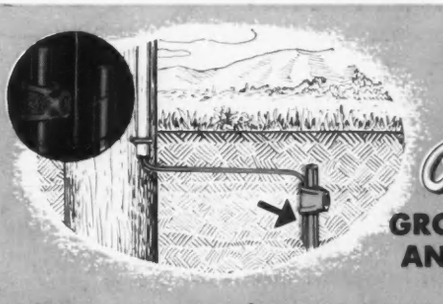
Once Copperweld Strand is up, it's up to stay. That's because it can't rust—its original high strength remains permanent. With Copperweld, you save by buying smaller sizes—fewer pounds. You eliminate maintenance and replacement costs. Easy to handle, it can be bent, served, moused or clamped.

*Trade Mark



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Give the GUY a CHANCE

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Holds more – Goes down faster

CAN BE INSTALLED BY MACHINE TO CUT LINE CONSTRUCTION COSTS

PITCH CONTROLLED

This accurately pitched, fast cutting blade really goes down fast. Every size anchor is individually "pitch controlled."

SMALLER HUB

The smaller hub on Chance Screw Anchors means less friction—easier installation. Less earth is disturbed during installation. That's why the Blackfoot has greater holding power.

Power companies trying to trim costs can profit by the experience of a Florida Utility where the use of the big Chance 15 inch Screw Anchor was combined with machine installation to reduce anchoring costs.

The use of the fifteen inch Blackfoot permitted one anchor to take the place of several smaller ones. This added up to a considerable saving in material costs. Speedy machine installation—with fewer anchors to install—slashed installation time to a small fraction of what was previously required.

How did these anchors hold?

Company personnel conducted their own pull tests to determine the holding power of these Chance Anchors. The dynamometer showed *no* creep at 22,000 pounds!

You can protect your investment in line construction by specifying Chance Anchors for your guys. They really hold the load!

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as troublesome as any it has ever faced.

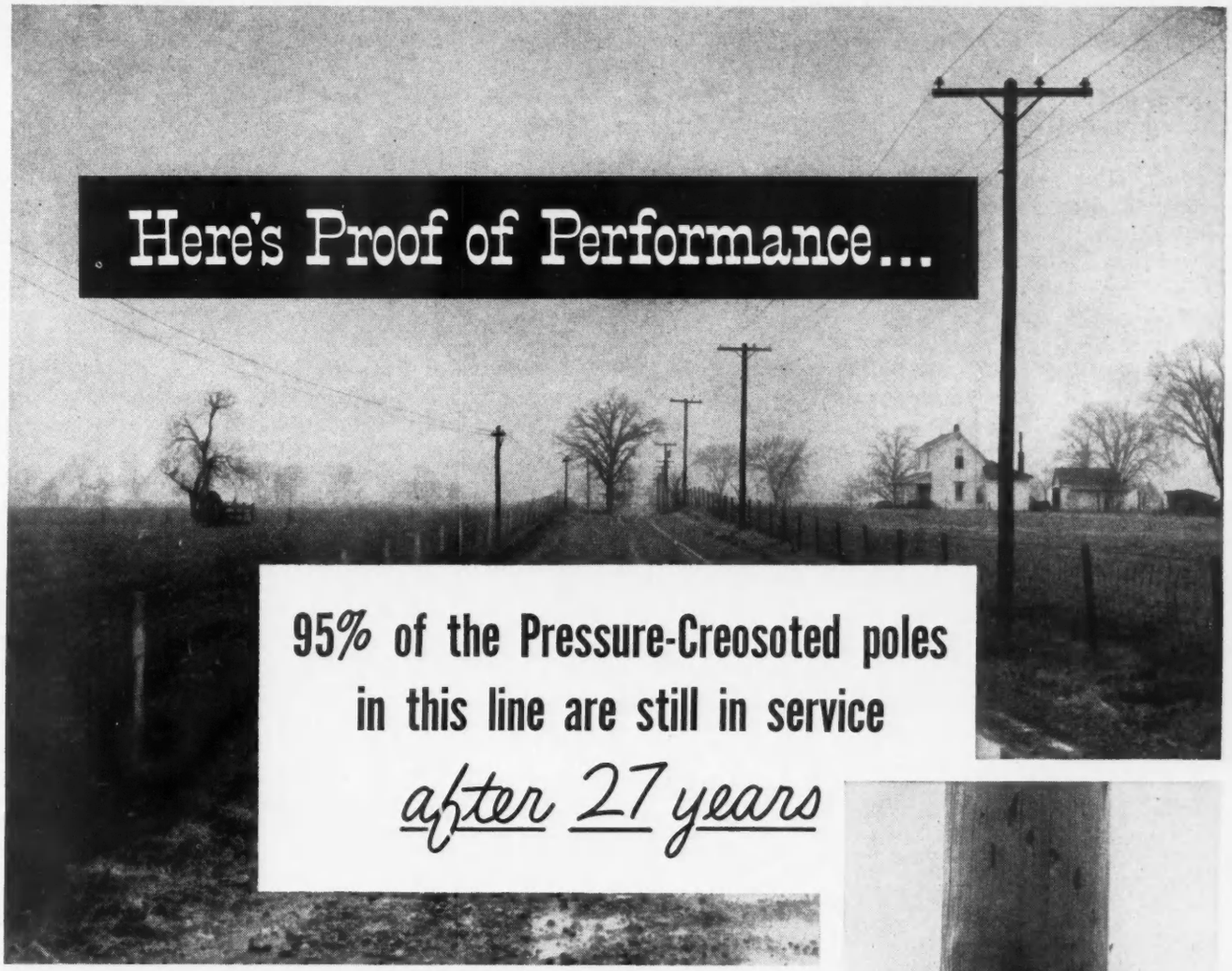
Briefly, the new era is characterized by one fundamental question: "Shall communications services be provided by common carriers whenever they can furnish adequate service at reasonable rates, or shall users be given wide opportunities to provide their own services through private radio systems?"

In some areas, of course, the question has been answered, one way or the other. It is unlikely that any commission would authorize anyone but a common carrier to provide public exchange and long-distance telephone service. On the other side, there is no question but that the long-established private radio systems of police and other entities would never be wiped out by any regulatory body. There are, however, a great many areas where the question has not been solved, and some of them are now pending before the Commission.

First, there is the plan of the state of California to establish a state-operated microwave radio relay system, to serve not only state public safety agencies (already eligible for their own radio operations), and California's Federal-State Market News Service (now operating its own private radio telegraph links), but also, in off-peak hours, the traffic of other state administrative agencies (now ineligible, generally speaking, for radio permits under FCC rules).

Preliminary staff work by the various arms of the FCC concerned with the California application has been substantially completed, and the FCC may take some action on the request within a few weeks. An outright grant without hearings or oral argument is unlikely, and the FCC's action may well take the form either of approving the necessary rule changes to permit the already-eligible state agencies to operate a coordinated system, or the scheduling of hearings or oral argument on the overall application.

One offshoot of the case has occupied considerable FCC attention, both in hearings last February and in a recent oral argument. It revolves around the fact that Federal-State's long-established radiotelegraph system operates on high frequency assignments in bands now allocated to international communications ser-



THE POLES on the right are part of a 27-year-old group in a line of Dayton Power & Light Company between Washington Court House and Leesburg, Ohio. Ninety-five per cent of the 1927 poles are "still in fine shape, almost as good as when installed."

CLOSE-UP on one of the poles showing the 1927 dating nail.

• These pressure-creosoted poles, located between Washington Court House and Leesburg, Ohio, were installed by the Dayton Power & Light Company in 1927. Today—27 years later—more than 95% are still in service.

Actually, officials of the utility company can recall only one replacement in the line due to rot at the ground line. The other replacements were the result of line improvements.

Records like these, established on the lines of many of the nation's leading power and telephone companies, are your assurance that pressure-treatment with Creosote is the way to get maximum pole life.

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UNITED STATES STEEL

vices, under worldwide radio agreements to which the United States is a signatory.

Federal-State is urging that it be permitted to stay on the out-of-band frequency assignments until the California statewide system plan is decided on, either affirmatively or negatively. If it loses that case, California says, Federal-State doubtless will switch to a wire line operation, over facilities leased from common carriers. If it wins, then of course Federal-State operations will become a part of the statewide microwave radio system.

On the other hand, the FCC staff contends that Federal-State should be required to give up the frequency assignments, on the basis that it has substitute means of service available, and that carrying out of the international obligations should not be held up indefinitely.

The common carrier spokesmen in the case, including the US Independent Telephone Association, have taken the position that, obviously, it is up to the FCC to decide whether the service should be allowed to remain on its frequency assignments until the California matter is disposed of. If Federal-State is required to move, they point out, they are ready, willing, and able to provide substitute service.

Second, there is the question of private intercity television links, in which many Independents have something of a stake, present or future. This stems from the fact that a number of television stations, generally located in small or medium-sized communities at some distances from other TV outlets, complain that they are financially unable to pay the regular mileage charges for long links from the nearest program centers on the Bell System's nationwide network.

As a result, the Commission has thrown open the subject of whether private systems should be permitted whether or not there are common carrier facilities available or promised, under certain conditions. The present rule provides that common carriers will furnish the service whenever possible.

The FCC states its viewpoint as follows — a recent request by a broadcaster for new rules on the subject "serves to focus attention on a problem that has been under study by the Commission since the lifting of the 'freeze' on new television station construction in 1952. The Commission is satisfied that the rules and policies, insofar as they contemplate that the nationwide television program network should be provided by common carriers, are sound and serve the public interest. The Commission is of the view that the existing common carrier network, including main routes and branch lines emanating therefrom, should continue its orderly growth in order to meet the requirements of the broadcasting industry for network transmission facilities.

"It has become increasingly evident, however, that a problem is presented by the application of the Commission's rules and policies with respect to television stations located in relatively small communities which are at a distance from program service points on existing common car-

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You can choose the truck that's exactly suited to your specialized needs. And like every INTERNATIONAL, it will be *all-truck*, and Tough-Job engineered for dependable, low-cost operation, and long life.

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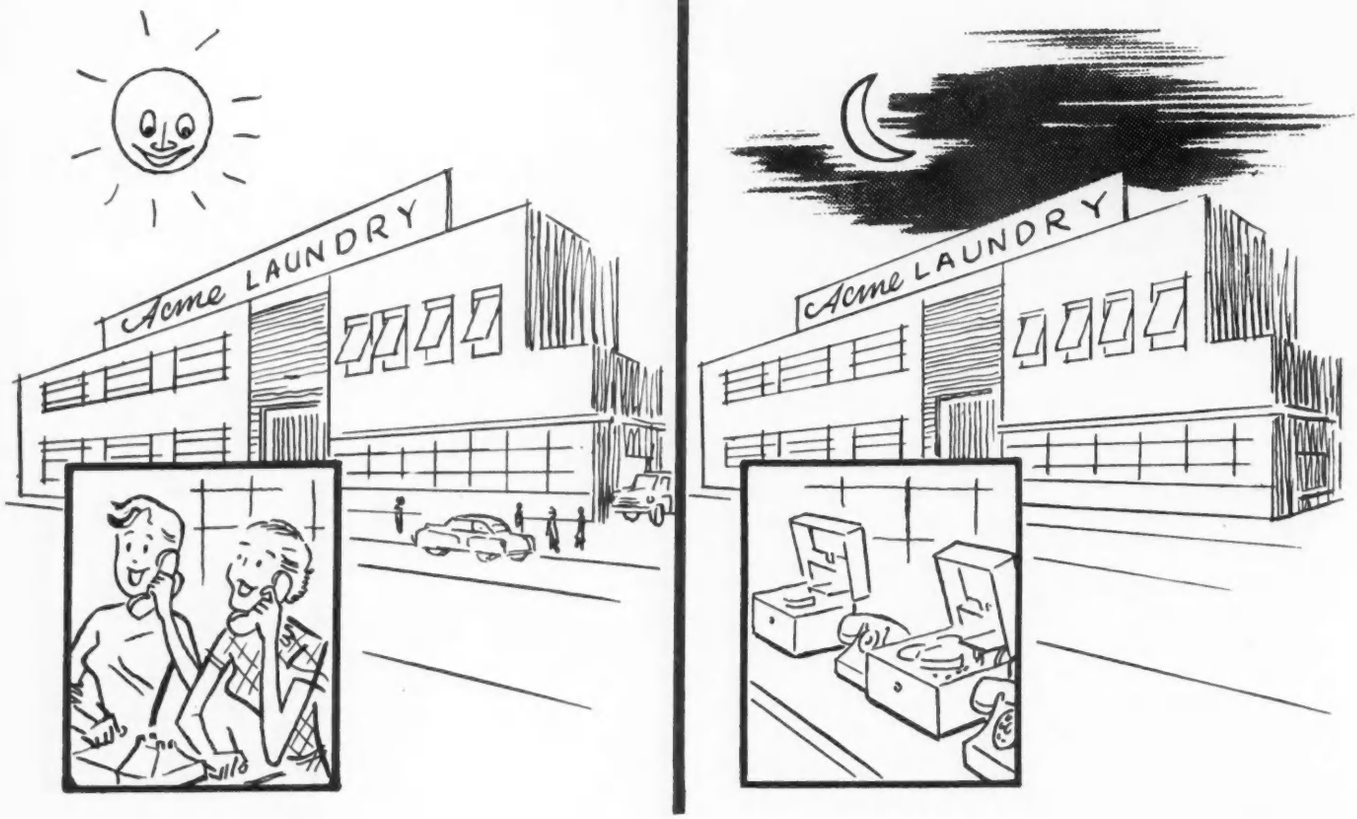

"Competition was breathing down our necks," says the owner of this huge laundry. "We had to do something different—offer something 'extra' that would make our service outstanding—and we found the answer in Peatrophone night order service.

"People were enthusiastic about this service from the beginning. Business women, especially, found it convenient to be able to phone after hours. Peatrophone night order service not only provided us with the 'extra' we needed, but it also brings us a substantial amount of new business each week."

Recently, the laundry has been using Peatrophones during the day too. When the clerks complained that it was impossible to handle so many phone calls during the morning rush hours, the Peatrophones were switched on to answer the phones and take messages. Confusion was eliminated and customers get excellent service without waiting.

Like the Acme laundry, many firms find that putting Peatrophones to work day and night, provides "extra" customer service that costs almost nothing, and pays big dividends.

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Note: Selective harmonic ringing subsets now available — all frequencies.

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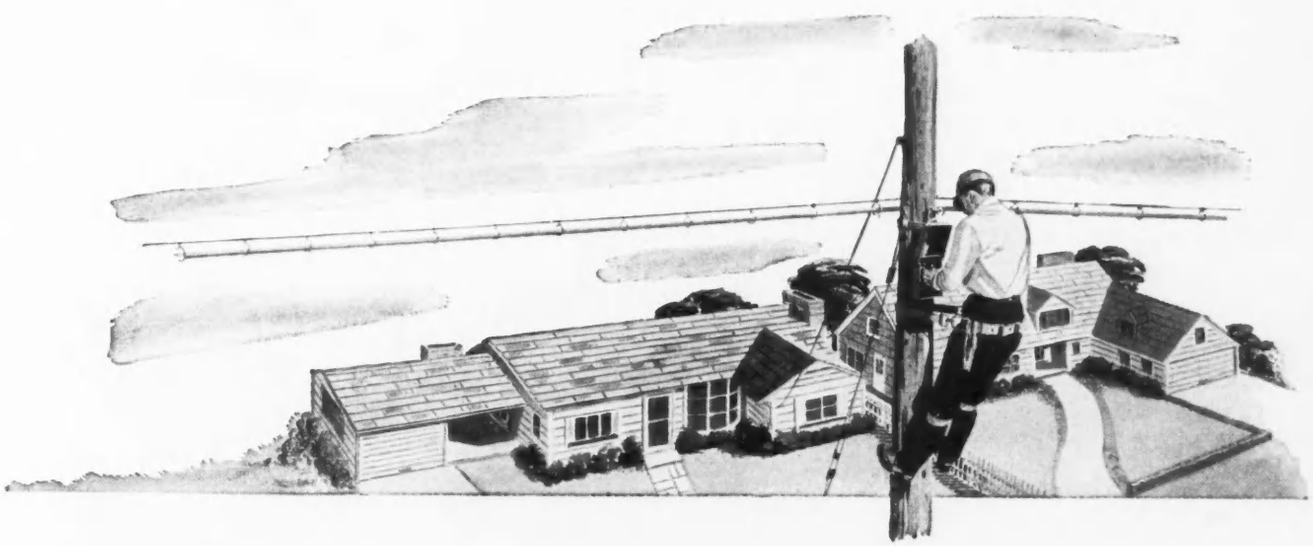
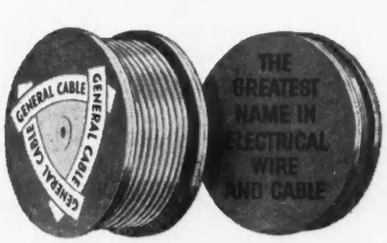


TELEPHONE DROP WIRE...



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Designed to resist excessive weathering, exposure to sunlight, abrasion and corrosive chemical vapors, they are available with two conductor (twisted pair or parallel) and with multiple conductor constructions ... with copperweld, bronze or copper conductors.

Here are a few of the more popular types:

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NEOTEL (Rubber-neoprene) parallel and twisted pair
Reinforced and Nonreinforced
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Of course, special constructions are available to meet your requirements. You name it...we'll design and make it. New Brochure gives complete facts fast! Write today!

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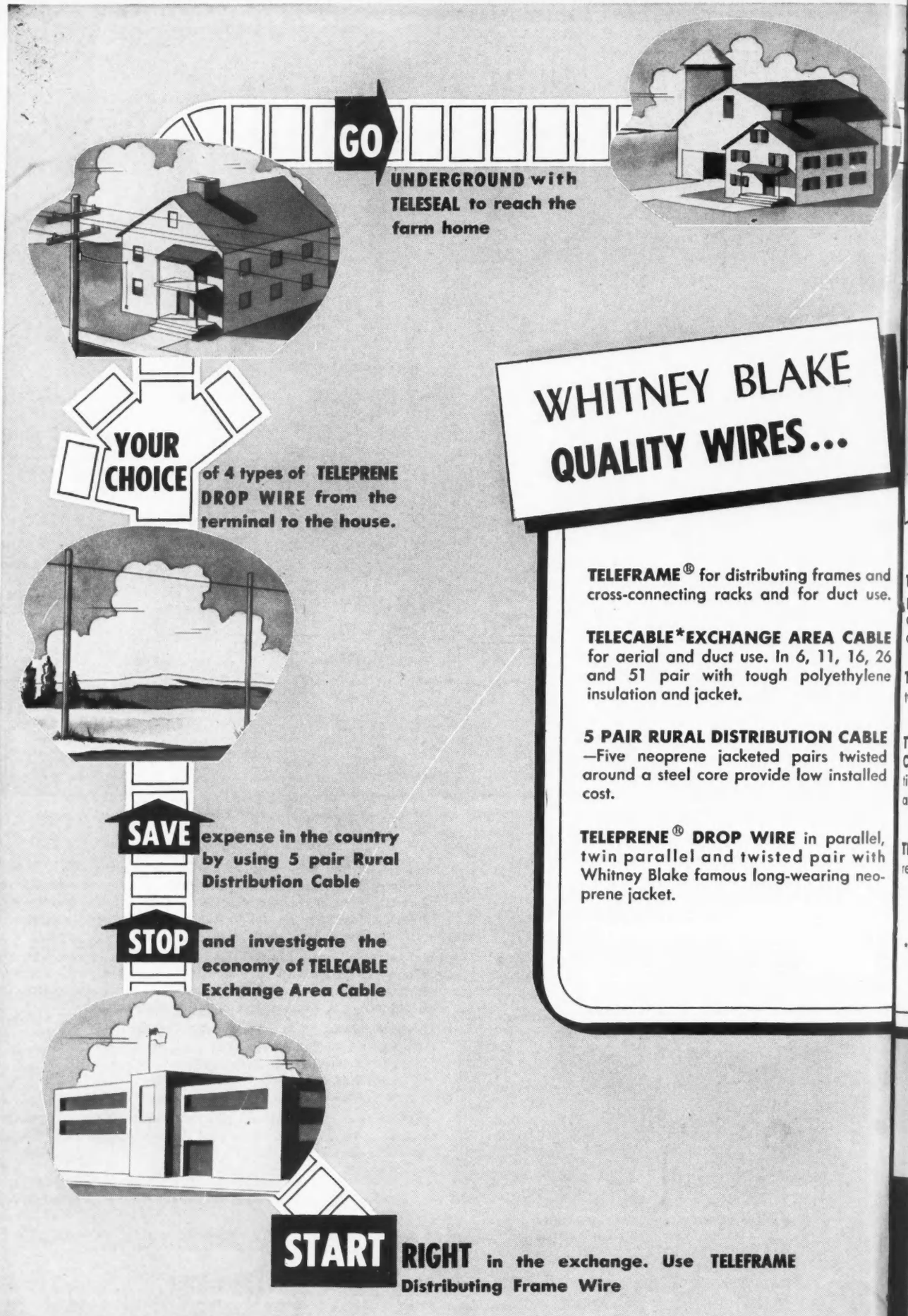
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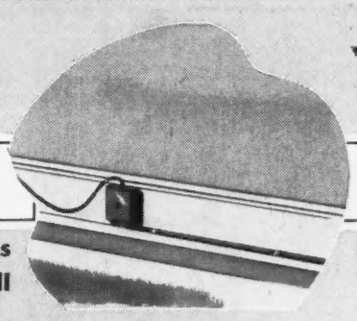
5 PAIR RURAL DISTRIBUTION CABLE —Five neoprene jacketed pairs twisted around a steel core provide low installed cost.
TELEPRENE® DROP WIRE in parallel, twin parallel and twisted pair with Whitney Blake famous long-wearing neoprene jacket.



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TELESEAL® submarine-cable-type neoprene jacketed wire for aerial use or direct burial in the ground without use of conduit.

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TELECABLE INSIDE TELEPHONE CABLE with semi-rigid Plastite insulation and Plastite jacket. In 6, 11, 12, 16 and 26 pair.

TELECORD® neoprene jacketed line and receiver cord with tinsel conductors.

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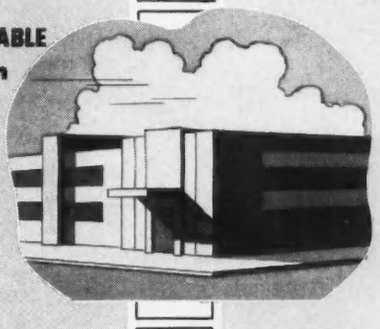
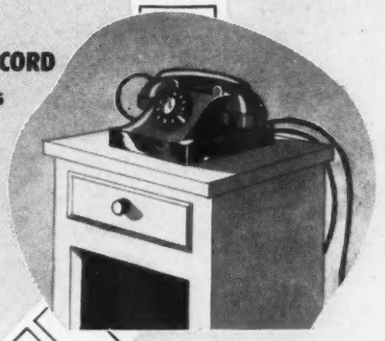
REST EASY, inside TELECABLE simplifies multi-station installation in plants and office buildings.



NOTICE how well TELECORD receiver and line cords stand up and minimize replacement costs.



YOU'RE SAFE when you use Whitney Blake quality wires all the way from the exchange to the telephone.

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You can use Lenkurt Carrier now to provide toll circuits on a ringdown basis; then when you convert to automatic operation, you can easily and quickly convert these circuits to provide dial trunks.

How do you convert Lenkurt Carrier from ringdown to dialing? By merely changing two simple plug-in-relays! There's no bother with expensive conversion kits, adapters, replacement of panels, no extensive rearrangements. You convert in a matter of *minutes!*

Remember, too: there's no need to build additional costly copper toll circuits when you can provide extra channels more economically with carrier. Follow the lead of dollar-wise telephone men and look into the many advantages you get only with Lenkurt Carrier.
Write today. Our engineers will be glad to help you.

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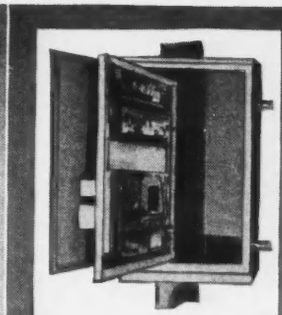
G-E 2-way radio serves subscribers where wire lines could not reach



Thousands of General Electric 2-way mobile radio units are providing dependable service in the telephone industry today!

Expensive wire line construction eliminated!

HERE'S HOW the Crane Lake Telephone Company provides complete area facilities at low construction cost. They installed G-E 2-way radio equipment.

One base station and directive antennas were set up at Handberg's Indian Trading Post on Lac la Croix, Canada. Another G-E station unit was located 23 miles away at the Crane Lake exchange. Today, Jay Handberg's call travels across the Canada-U.S. border via the G-E radio route to Crane Lake. There, operator Carla Hansen connects him with his brother who is attending school in the U.S. This unique installation has meant communication for the very first time, regardless of weather or season. Since the original link was made, other subscribers in the area have joined this General Electric network.

Take a second look at your service expansion plans! G-E communications will solve many problems for you too! Get detailed information today. Write: *General Electric Company, Section* X89104-15, *Electronics Park, Syracuse, N. Y.*

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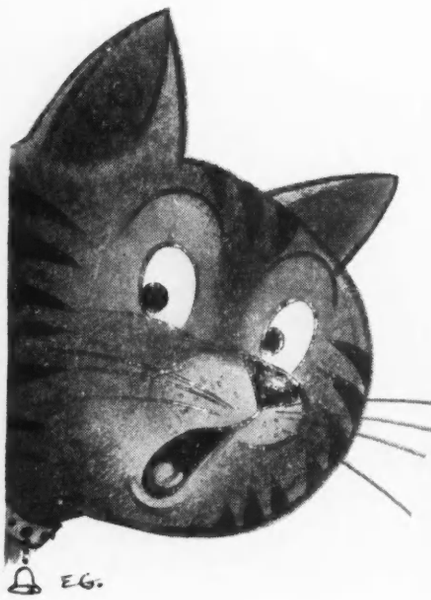

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The public likes economy. We do, too; so it's probably pretty good business to explain this fact about Western Electric to Bell telephone users. That's why the national advertisement on the opposite page shows one of the ways in which we concentrate on savings . . . to help the Bell companies provide dependable service at low cost.

Rebirth of a telephone!

TELEPHONES FOR THE BELL SYSTEM are made at Western Electric . . . and also made new again. Here's one of our men testing a batch of reconditioned pay telephones in one of Western Electric's 29 repair centers. One of these centers is right in the territory of your own Bell telephone company.

Cleaned, checked, and repaired if necessary, veteran telephones are refinished and sent back for additional years of good service. Last year some 4,500,000 telephones of all kinds were "reborn." And the cost to your Bell telephone company? Less than one-quarter the cost of new telephones. That means quite a saving, but we also help your telephone company make savings by repairing switchboards, booths and many other kinds of equipment.

If we didn't work so hard to find ways to repair things, maybe sales of the *new* telephone equipment we make would go up . . . but that wouldn't necessarily be best for telephone users. Being part of the Bell System we share the same aim as your Bell telephone company: to furnish the best possible service at the lowest possible cost to telephone users.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

Do You Need the Professional Touch?

Sure, you can get along with a "home-cooked" telephone directory. But are you taking full advantage of the potentialities of your operating area in advertising revenues? Is your directory an asset or a liability in public relations? Are you satisfied with your showing in "multiple listings?" If the answer is "no" to any of these questions, call Loomis for the professional touch.

KNOW-HOW TO SOLVE YOUR DIRECTORY PROBLEMS

• 666 cities and towns in 20 states are served by the 234 directories that retain Loomis services.

LOOMIS
ADVERTISING COMPANY

"Where to Call"

FT. WAYNE, IND.
229 E. Berry St.....EAstbrook 3477

ST. LOUIS, MO.
506 Olive.....GArfield 3700

OMAHA, NEBR.
Omaha Nat'l Bank Bldg.....ATlantic 0188

KANSAS CITY, MO.
810 Baltimore.....HArrison 1270

PHILADELPHIA, PA.
1201 Chestnut.....Rittenhouse 6-4440

BALTIMORE, MD.
1229 North Charles.....Vernon 7-0642

EDITORIAL

Telephone Engineer

PRESCRIPTION FOR PROSPERITY

RECENTLY A state public service commissioner, in an informal conversation regarding the problems of small telephone companies, made this remark: "Most of the small companies that are in difficulties have nothing wrong with them that bang-up good telephone service wouldn't cure."

Elaborating on this theme, he said: "Whether or not a commission can legally hold down rates because the service is poor, the quality of the service is, nevertheless, frequently the key to the whole proposition.

"For instance, if the commission authorizes a higher rate for the existing poor service, the company may lose so many subscribers that it is worse off than before."

"I believe that most regulatory commissions have found by experience," he continued, "that there is very little public opposition, and sometimes none at all, to a justifiable increase of the rates of a small company if the service is good — and by that I mean modern as to type as well as good in quality. The troublesome cases are those where the telephone company is asking for a higher rate for poor or indifferent service."

This sounds good to us, of course, because for a long time we have been expounding our own recipe for prosperity in the telephone business — Good Plant — Good Service — Good Rates!

It is encouraging to note that the modernization of small telephone company plants is now proceeding at the highest rate ever. But there are still a large number of small telephone plants that need to be modernized — and that, we think, will have to be modernized if the company owning them is to enjoy the measure of prosperity it should have.

There is in the whole of this situation, we think, an optimistic note.

If the trend of the future development of the telephone industry was such that it was gradually becoming impossible, or at least impracticable, for small telephone companies to exist, those who own such small companies could hardly be blamed if they took the position of "What's the use?" as to the proposition of modernizing their plant.

But it should be observed that that is not the trend of the telephone industry. Excepting as to those situations that are uneconomic under present levels of cost and expense because of operating areas too small or too sparsely settled to provide necessary growth, the trend is, it seems to us, to solidify the position of the small company that has modernized and is supplying top-grade service, and that has obtained rates for its service that are justified by those things.

It is, we believe, a practical certainty that small companies of that latter class will be prosperous businesses and also growing businesses.

"Good Plants — Good Service — Good Rates!" — that, we believe, is the prescription for prosperity in the telephone business.

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Which twin

*The Stromberg-Carlson "1500 W" telephone employs a transmitter and receiver each having a 5 db. gain compared with the units in the standard 1500 series. The result is a completely balanced instrument insuring an even transmission level on long or short loops.

in has the W?

You can't tell... and neither can your subscribers... which neatly solves a tough problem

Many telephone manufacturing companies make extended range telephones to provide normal transmission over long-loop lines. But there's *only one telephone* series in America in which the standard model and the extended range model look exactly alike. That's Stromberg-Carlson's with its standard 1500 telephone and its "1500 W" (extended range) telephone*.

You know what this means. You can "swap" existing instruments—give a nearby subscriber a standard phone and a more distant subscriber a "W" type telephone—and nobody objects. Because only you and your service man *know* that these instruments aren't identical.

Plus the fact that both models are in our now-famous 1500 series—with the handsome modern design, the extended number plate dial, the original "dust cover" over the dial, the re-designed handset and the factory-matched ringer and capacitor assembly—all of which make these instruments outstanding.

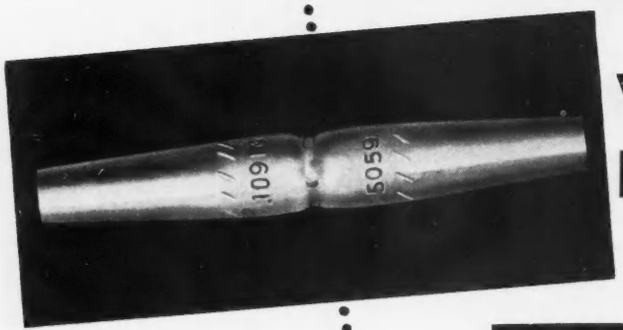
Stromberg-Carlson "1500 W" telephones now available for immediate delivery. Order from your nearest branch.

XY

Stromberg-Carlson®

Factory, General Offices: Rochester 3, New York.
Branch Offices: Atlanta 3, Chicago 6,
Kansas City 8, San Francisco 3 • Mfg. Branch, Dallas.

TALK ABOUT SPLICING AND DEADENDING STEEL WIRE . . .



You'll want to use the NEW Reliable

WIRELINK and WIREVISE

This new automatic type splice and deadend were specifically designed for use with the supporting wire in Rural Distribution Telephone Cable. They are also recommended for use with .109 conductor and with all 12 BWG iron wire. They are new in function, but certainly not in principle. They follow the design of the famous Reliable Strandlink and Strandvise, which have been proved under severest conditions for years. Wire is merely pushed into the Wirelink for splicing, or through the Wirevise for deadending . . . it's as simple as that. The case hardened steel gripping chucks hold more than the nominal strength of the steel wire. Think what this will mean to you in reduced installing and maintenance costs!

Wirelinks are pressure packed at the factory with pure petroleum jelly to provide lubrication and to permanently prevent corrosion, making them suitable for splicing conductor, as well as supporting wire.

Don't delay getting a sample and complete data

RELIABLE ELECTRIC COMPANY
3145 Carroll Avenue, Chicago 12, Illinois

Reliable

Telephone Protective and Terminal Equipment for all Station, Line and Central Office Needs.

OVER 45 YEARS' SERVICE TO THE UTILITIES

Another reason why
UTILITIES EXPECT MORE FROM **POWERS** *American*

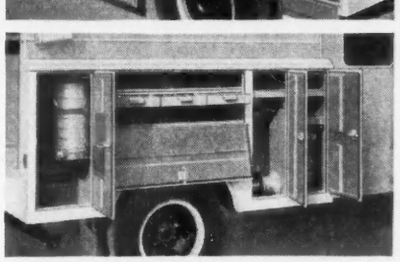
The Ultimate in Line Construction Equipment

MANAGEMENT
likes the 800-C because it saves man-hours—furnishes crew comfort—provides a safe, durable, low-upkeep unit for heavy work.

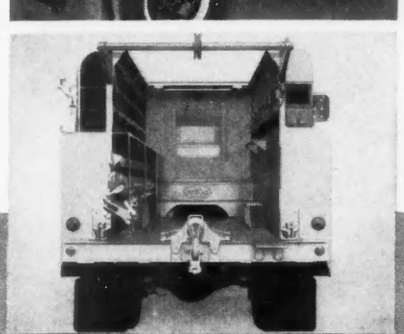
SUPERVISORS
like the 800-C because it's a completely equipped body that's easy to load—easy to use—easy to inventory.

CREW MEMBERS
like the 800-C because it keeps tools and supplies in easy-to-find order. And, with a Pole-Master it's a lineman's dream.

All shelves and parts bins are standard equipment. Street-side doors open 180° for easy access to all compartment space.



Sliding drawers are furnished in curb-side compartments. All door locks are keyed alike. Crew enclosure seats four.



56" wide cargo area provides space for miscellaneous supplies. The body can be equipped to meet individual needs.

Utility operators indicate that the 800-C is destined to set a new standard for line construction vehicles.

It furnishes the storage space—the crew facilities—and the equipment for handling the most rugged types of routine or emergency line work. And, when equipped with a *Pole-Master* fully-powered, live-boom derrick—as shown above—crews can set poles up to 75 ft. in length.

The Series 800-C in 11′, 12′3″, and 13′ lengths—and the Series 800 (without crew enclosure) in 11′ or 12′6″ lengths—can be furnished with *Pole-Master* or conventional derrick.

COMPLETE DETAILS and prices are yours for the asking.

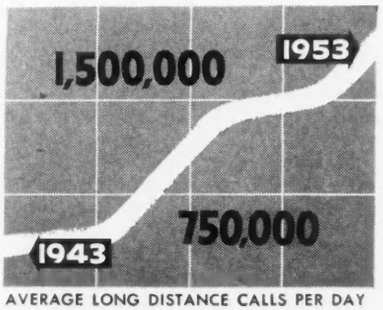
Powers-American Division

McCABE-POWERS AUTO BODY COMPANY

5900 NO. BROADWAY • ST. LOUIS 15, MO. 428 LATHAM SQ. BLDG. • OAKLAND 12, CALIF.

Look what happens during an average day

. . . in 5,100 Independent Telephone Companies across the land.



AVERAGE LONG DISTANCE CALLS PER DAY
for Independent Telephone Companies

● 100,000 employees at 11,000 exchanges keep telephone lines humming 'round the clock. ● 35 million local calls are made over 9 million Independent telephones. ● Operators at busy switchboards complete as many as 1,500,000 long distance calls. ● More than $300,000 worth of new telephone equipment and plant facilities are added to growing Independent companies. ● Every minute of the day, another Independent telephone is placed in service.

Any way you look at it . . . by the day . . . by the month . . . by the year . . . the 1½ billion dollar Independent Telephone Industry is one of this country's fastest growing businesses!

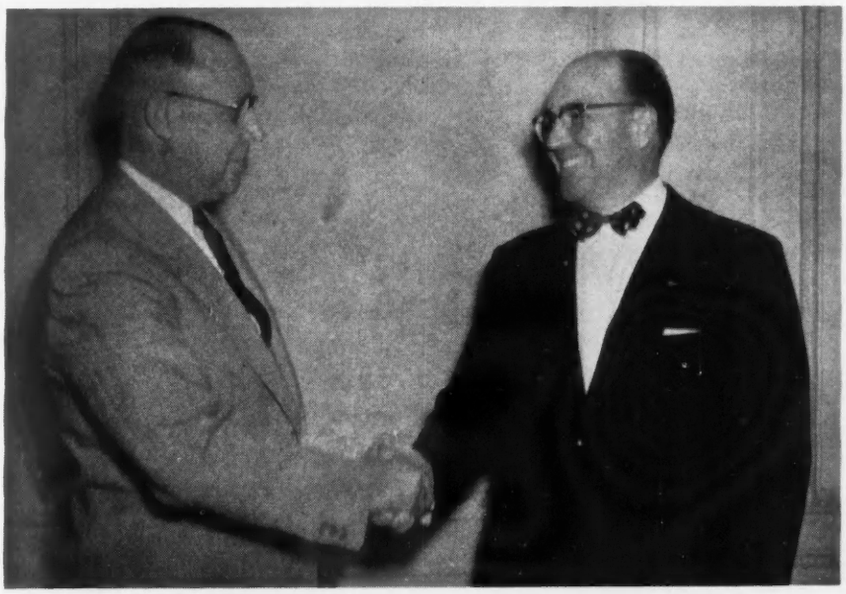
●Telephone instrument in photograph above manufactured by Automatic Electric Company, Chicago, Illinois.

USITA

United States Independent Telephone Association

Pennsylvania Building : Washington, D. C.

U-S-I-T-A Holds 57th Annual Convention



Retiring U.S.I.T.A. President WARREN B. CLAY (right) congratulates the new association president DONALD H. CAMPBELL, Rochester, N.Y., after his election.

Pioneer President Elect RAY DALTON, (left) Everett, Wash., presents retiring pres. FRANK S. BARNES, Rock Hill, S.C,. a scroll expressing appreciation for Mr. Barnes' services to the Independent Telephone Pioneer Association.

THE RAINS CAME TO Chicago in torrents (6.72 inches in 48 hours) but the thunderstorms which dumped tons of water on the Loop did not dampen the enthusiasm of the approximately 3,000 representatives of the Independent telephone industry who attended the 57th Annual Convention of the United States Independent Telephone Association at the Conrad Hilton Hotel, Chicago, October 11, 12 and 13.

It was a big and important convention for the Independent telephone industry. The topics discussed at the technical conferences and at the general sessions, the manufacturers' exhibits, the Association's annual banquet, and the Pioneer entertainment all added up to a great meeting.

Three new directors were elected to the U.S.I.T.A. board. Thomas A. Boyd, vice president of the General Telephone Corp., New York City; W. Gardner Winters, president of the Hull Telephone Co., Houston, Texas; and Hans Kraepelien, president of the North Electric Manufacturing Co., Galion, Ohio, were named to the board to succeed L. F. Shepherd, Erie, Pa.; Oscar Burton, Tyler, Texas; and G. A. Berting, Galion, Ohio.

Directors reelected to office were: Harris G. Allen, Madison, Wis.; Frank S. Barnes, Rock Hill, S. C.; Hugh A. Barnhart, Rochester, Ind.; C. S. Cadwell, Chicago, Ill.; D. H. Campbell, Rochester, N. Y.; Warren B. Clay, Hutchinson, Minn.; W. C. Henry, Bellevue, Ohio; S. A. Lane, Russelville, Ark.; Foster B. McHenry, Jefferson City, Mo.; and F. E. Norris, New York City.

Donald H. Campbell, president of the Rochester (N. Y.) Telephone Corp., was elected president of U.S.I.T.A. succeeding Warren B. Clay. Other officers elected at the organizational meeting were: First Vice President, Merle Hale, vice president of the Lincoln (Neb.) Telephone & Telegraph Co.; Second Vice President, Donald C. Power, president of General Telephone Corp., New York City; Third Vice President, C. W. Haas, president of the Big Timber Home Telephone Co., Big Timber, Mont.; Executive Vice President, Clyde S. Bailey, Washington, D.C.; Treasurer, Carl D. Brorein, president of the Peninsular Telephone Co., Tampa, Fla.; Secretary, George C. Richert, Washington, D.C.; and Assistant Secretary, Leola D.

Telling The Business Story

By HAROLD BRAYMAN
Director, Public Relations Dept.,
E. I. du Pont de Nemours Co.
Wilmington, Dela.

THE OVERRIDING problem that affects us all is that of public misunderstanding of and hostility toward business — a hostility which demands, and frequently gets, government action antagonistic to enterprise. In our country it is an undeniable fact that the people do rule and, if the people are against any institution, its road is hard at best.

Since the depression years of the 30's, this public suspicion and hostility have developed to such a degree that the problem of winning a favorable public opinion has become one of the most important facing American business today.

The business leader must speak up. His is the voice of industry; if he does not speak up, industry has no voice. It is not the easy way — it is a lot to ask, I know. One cannot spend years, as I have, in intimate association with the management of a major corporation, and not realize keenly the hard row of the industrial executive. It is one of the most exacting, yet one of the most critical functions performed in modern society.

With urgent worries pressing upon him from all sides, it is hard to ask the executive to take time for discussion of policies and principles with employes and neighbors. It is hard to ask him to engage frequently in public speaking, a difficult task for which he is often not trained. But there is no other way. Poor fellow, this is one duty he cannot delegate without disaster, any more than he can delegate to another the job of admiring his wife.

The principle I am urging has been too little recognized by industrial circles. The businessman is normally reluctant to speak out loud; he frequently shuns the spotlight and is content to plug his wares, not himself. Lord Chesterfield might have thought this modesty laudable, but it results in this strange paradox: we find many people who will swear by Jones' paint and swear *at* Jones.

These methods — with each company working in its own back yard — are not just untried dreams of some visionary public relations man. They are tested, proven principles. They have operated successfully for years in many nonindustrial fields of activity. And wherever they have been intelligently tried in industry in recent years, they have produced results varying from good to spectacular.

The problem is to bring about, throughout industry, a wider application of these so-called precinct techniques — to get more and more industrial leaders to set up the organizations within their own companies to carry on these activities in their neighborhoods — to get a greater number of able men, each in his own precinct, presenting the facts which people need to know to reach intelligent conclusions and telling the story of business, and telling, and telling, and telling it again.

And what a story we have to tell. For it is the inventor, the developer, the industrialist, and not the agitator and the reformer, who has laid the basis for most of our American progress. Social adjustment necessarily follows economic change as a matter of simple cause and effect.—*Condensed from a paper presented at the* 1954 *U.S.I.T.A. Convention.*

Fitzwater, Washington, D.C.

The election of officers was highlighted by presentation of a watch to retiring President Clay in appreciation of his service to the Association and the Independent telephone industry during his term as leader of the national organization. Hugh Barnhart, a director of the association and a veteran member of the Independent industry presented the watch to Mr. Clay.

Ray Dalton Elected Pioneer President

RAY DALTON, vice president of the West Coast Telephone Co., Everett, Wash., was elected president of the Independent Telephone Pioneer Association at the organization's annual meeting on October 12. Mr. Dalton, a member of the Independent telephone industry since 1925, succeeded Frank S. Barnes, president of the Rock Hill (S. C.) Telephone Co.

Other officers elected by the Pioneers were: First Vice President, Jack Haley, secretary of the Texas

The pictures on the opposite page were taken by the TE&M Camera during the U-S-I-T-A Convention.

Telephone Association, Austin, Texas; Second Vice President, Foster B. McHenry, president of the Capitol City Telephone Co., Jefferson City, Mo.; Executive Secretary, Mayme Workman, Springfield, Ill.

During the business meeting the Pioneers elected three new members to the board of directors: Kelly McNish, Bristol, Tenn.; Ralph F. Lucier, Warsaw, Ind., and S. F. Nixon, Sr., Westfield, N. Y.

President Barnes presided at the Pioneer meeting. In his opening remarks he praised the work of Executive Secretary Mayme Workman, the various Pioneer Committees, and the General Telephone Co. of Illinois for its assistance in auditing the organization's records.

"It has been a good year for the Pioneers," he said. "The constant growth of ITPA has made the Pioneer emblem symbolize an honor reserved for those who have truly earned it — those who have devoted 15 or more years to making Independent telephony the great industry it is today."

In his closing remarks, Mr. Barnes urged present ITPA members to re-

TELEPHONE ADVERTISING INSTITUTE
3 NEW PRODUCTS
TELEMOBILE CENTEX
RATTHEON
Excellence in Electr
ANCE PLAN

TOP (L. to R.):—LEON ROBERTS, Bloomington, Ill., is pictured during U.S.I.T.A. sessions with ALLEN S. CRANE, Chicago, Ill.; MR. and MRS. HANS Y. KRAEPELIEN, Galion, Ohio, are posed before equipment of the North Electric Mfg Co. of which he is the president. Mr. Kraepelien was named to the U.S.I.T.A. board during the convention; R. A. LUMPKIN, Mattoon, Ill., and CHARLES S. CADWELL, Chicago. BOTTOM (L. to R.) Kellogg's BILL VANCE and CLAUDE MANNING welcome Texas Telephone Association President W. G. WINTERS, Houston, to the convention; MRS. IRVING TODD, Hastings, Minn., WINSTON RODORMER and ARTHUR GIBSON of New York State pose for the TELEPHONE ENGINEER camera; LELAND MAST, Chicago, and WALTER WRIGHT, San Angelo, Texas, are busy talking, of Texas, that is!

mind their friends and co-workers that membership in the Pioneer organization is not restricted to any special group. "It is open," he said, "to any worker who has served Independent telephony in any capacity for a combined total of 15 years or more."

At the conclusion of the business session the Pioneers and their guests were entertained by the famed Notre Dame Glee Club. This famous choral group which has made itself one of the best known, loved and enjoyed organizations in the country presented a program of choral singing which received the praise of the large audience which packed the Grand Ballroom of the Hotel Conrad Hilton.

The Pioneer's Sixth Annual Hobby Show presented interesting hobby exhibits prepared by: E. M. Hiestand, Madison, Wis.; Cecilia M. Burke, Springfield, Ill.; Mamie Vidlock, Lincoln, Neb.; Hattie Staley, Lincoln, Neb.; Altha C. McCreedy, Clyde, Ohio; Mrs. W. H. Dean, White Salmon, Wash.; A. S. Watson, Oil City, Pa.; Dan H. McNulty, Chicago; T. S. Risser, Lincoln, Neb.; Wm. Rosenthal, Lincoln, Neb.; J. G. Steinhagen, Brooten, Minn.; and I. G. Brader, veteran pioneer, Madison, Wisc.

U. S. I. T. A. President Elect
D. H. CAMPBELL,
Rochester, N. Y.

Pioneer President & Director
RAY DALTON,
Everett, Wash.

First Prize in the women's section went to Altha C. McCreedy for her exhibit of "Little Elderly People." Second prize in the women's section was won by Mamie Vidlock for her exhibit of "Spanish Weaving and China Painting."

The exhibit of "Shells and Bullets" sent in by J. C. Steinhagen, won first prize in the men's section. Second prize in the men's section went to A. S. Watson for his exhibit of "Photographs."

EDITOR'S NOTE — *Other highlights of the U.S.I.T.A. Convention are covered in the following pages. Copies of the papers mentioned may be obtained from the United States Independent Telephone Association.*

Convention Photos

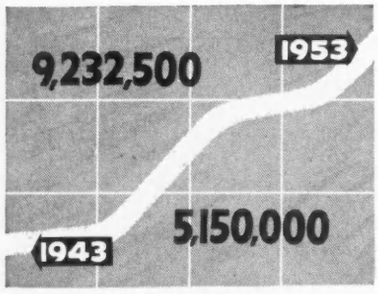
The pictures on the opposite page were taken by the Telephone Engineer Camera during the recent U.S.I.T.A. Convention. Other Convention Photos appear on pages 47, 49, 58, 59, 61, 69, 73 and 78.

BUCKEYE
TELEPHONE
B. CHANCE CO.

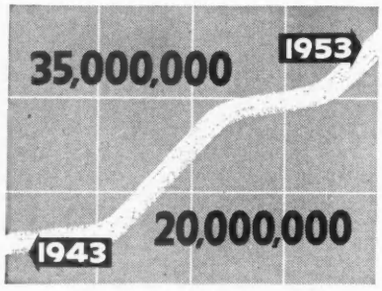
Independent Telephony Is On The March

By WARREN B. CLAY
U.S.I.T.A. President,
Hutchinson, Minn.

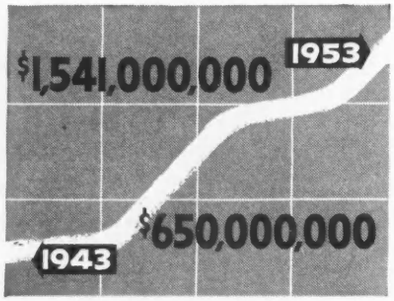
"OUR business is growing. In the five year period since 1949 there has been a 35% increase in the number of Independently owned telephones, and 72.5% in additional capitalization obtained for investment . . ."



TELEPHONES IN SERVICE
in Independent Telephone Companies



AVERAGE LOCAL CALLS PER DAY
for Independent Telephone Companies



GROSS PLANT INVESTMENT
of Independent Telephone Companies

MERE statistical expansion is, an old story with the telephone business. With the exception of a few years during the depression of the 30's, there never has been a period, in the more than three-quarters of a century of the telephone industry in the United States, when steady growth was not the normal order of things.

And yet the telephone industry is not as old, if mere years are counted, as many of our other major industries. I will venture to say there are some sitting in this room who can personally recall modest beginnings of telephony in their own communities. There are those who can look back on the days, shortly after the turn of the century, when the telephone had recently emerged from the status of a little more than a laboratory toy, to become seriously accepted as a form of general public service. Other forms of public service are much older.

But age, in itself, is a relative thing. The really important distinction must be drawn between mere age in years and *maturity!* In this sense, maturity means the approach of full bloom or full growth, beyond which further expansion may be expected to slow down or taper off. It means reaching a ceiling, or saturation point, beyond which much further development cannot be reasonably expected. Some industries have a natural saturation point strictly keyed to the growth of population, such as food and clothing. The average citizen only wants to eat three meals a day and wear one suit of clothes at a time. And so, whether he may be persuaded to eat a better quality of food or wear more expensive clothing, there is at last a quantitative limitation on the sale of these products in relation to available number of people who use them. Quantitative growth then becomes a matter of population growth.

That might suggest, by comparison, that an average citizen can only use one telephone at a time. But here the record of our telephone business shows that no such saturation point has ever been reached, and is not presently in sight. Truth of the matter is the full potential of telephone service, *per subscriber*, has not even been seriously approached. We do not even know ourselves, at this

time, how much service we will be able to give the American subscriber. We can only march ahead toward that goal.

"Dynamic Growth"

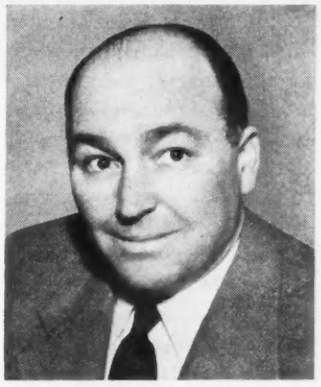
IT IS WITH this challenging thought in mind that I would like to talk with you, today, about the continued dynamic growth of our Independent telephone industry. I refer, therefore, not only to the record of what has been accomplished, as impressive as that record is, especially since the end of World War II, I invite your attention chiefly to the unbounded horizon — the "unlimited ceiling" as they say in aviation — which will surely be ours, if we use the means now within our hands to see that these promising prospects are achieved. And one of the most valuable and important instruments for such success, as I see it, is the continued organized industry effort of your national association, the U.S.I.T.A.

One imposing historical bench mark of what has been done, so far, comes very readily to my mind — because it brought to me one of the proud moments of my life. I refer to that day last November, when I stood in the White House as your representative alongside the representative of the Bell System. I will always be grateful for the opportunity given to me to participate in that ceremonial presentation to President Eisenhower of a telephone instrument symbolizing the installation of the 50,000,000th telephone in the United States.

Yet, the question which has been uppermost in my mind ever since that day is: *Where do we go from here?* What will be the pace of future growth? Where will it occur? How will it occur? What can we, as Independent telephone men and women do to assist and marshal this growth, in an orderly manner, and in the best tradition of public service?

As for our Independent industry's part in this process of growth, there is much reason for satisfaction. The splendid statistical record for Class A, B, and C companies compiled and published by U.S.I.T.A. for the calendar year ending December 31, 1953, speaks for itself.

Based on returns from reporting companies, which we have reason to believe parallels, in a general direction, the experience of the entire Independent industry, we see here a 5-year increase of 35 per cent in the number of telephones, 65 per cent in the dollar amount of wages paid to employes, and 72.5 per cent in additional capitalization obtained for investment. *In other words, our business is growing, the number of employes and investors is growing!* If we extend our comparative range back as far as 1944, we find that the *number of Independent company telephones has more than doubled in a single decade*—from around four and a quarter million in 1944 to an estimated total of almost nine and a quarter million as of the end of 1953.



WARREN B. CLAY
U.S.I.T.A. President is manager of the Hutchison (Minn.) Tel. Co.

Improving Service Standards

OF EQUAL importance to the sheer growth in the number of subscribers is the progress made in improving service standards. The 1949-53 comparison, shows that our reporting Independent companies had increased dial exchange service from little more than 50 per cent to over 65 per cent, while the total proportion of magneto service has dropped to a mere 8 per cent. This trend is most essential. It would be manifestly impossible for our companies to meet the demand of increased service, which we can see ahead of us, without the proper caliber of plant and equipment to carry the load. This trend means, in other words, that in addition to merely growing older and adding more telephones, we have learned how to serve better, by actual experience, in war and in peace, in good times and in bad.

The pace of our Independent company station growth over a 20-year period has been in the order of 135 per cent, or more than five times the rate of growth of our national population during the same period. And that brings me to a more significant factor in considering our future expansion. This has to do with our geographical location.

Our Independent telephone companies serve, with some rather large metropolitan exceptions, mostly in the rural and suburban areas, in the small towns and cities. Many of these lie near the larger cities served by the Bell System. We have seen, during the past few years, that it is precisely in these areas where the relative growth of population is exceeding the rate of growth within the older and larger cities.

I do not have to labor the point with this audience, I am sure, that the prevailing trend of population, and of business and industry in many instances, is more and more to the suburb, to the satellite cities, and fringe areas and to the newly founded settlements. Therein lies both our opportunity and responsibility as Independent telephone people.

In other words, we must look forward to the likelihood that future population growth will take place, *to a relatively larger extent in areas now served by Independent companies, than in many areas now served by Bell System companies!* There are a number of reasons for these developments.

There is the trend away from the costly and time-consuming traffic jams of congested areas, where mass public transportation service has deteriorated. There is the encouragement given by our federal government to industrial decentralization, as a matter of national security as well as of economic policy.

There are also new factors such as the spread of natural gas and electrification into the hinterlands. Consider the fact that the atomic plant development alone has created large cities where fields of waving corn stood only a few years ago. Consider the recommendation made by President Eisenhower, earlier this year, for a $50 billion, 10-year highway construction program. This would surely open up and criss-cross the heart of previously remote Independent company service areas.

Yes to shoulder these future re-

sponsibilities I say again, "Independent Telephony Is on the March." It will have to be on the march if it is going to get its fair share of the business opportunities and realize its full potential of service requirements.

To do all this we must naturally strengthen our bonds of intercompany co-operation. We do not have available the closely knit corporation control of a common system organization, such as the Bell System companies have. There is no other way in which we can help ourselves, and help each other, to meet these goals except through an organization such as this — your own U.S.I.T.A. Only here do we find the common denominator which embraces the interest of all Independent operating companies, large and small, as well as exceedingly valuable services of the Independent manufacturers and equipment supply membership. Only through centralized effort, which is available to us in U.S.I.T.A., and affiliated state associations, can we help each other to keep our individual company balance while forging ahead under constantly changing financial, regulatory, and legislative influences.

Most of all, we must look ahead — thinking in terms of what will be needed years from now. Of course, looking ahead is another old story in the telephone business. It is a lesson most of us learned years ago. If it had not already become a habit, a good many of us would not be in business today. In fact, I do not know of a telephone man, worth his salt, who does not usually think in terms of 10 years ahead, and in some instances even 25 years ahead. Yes, the business opportunities will be there for Independent telephone companies. They will be limited only by the adequacy of our plant to serve, and our salesmanship to promote a demand for their service.

Corporate Organization

ANOTHER factor affecting our industry's ability to get our share of what is coming to us is the somewhat misunderstood factor of corporate organization. Despite all the figures as to growth of business, the fact remains that the total number of Independent companies is not growing.

This has given rise to some fears that the Independent companies are not holding their own. The true fact, of course, is that much more business is being done. It may have to be done by fewer companies than in the past. This is not a new phenomenon by any means. It is a pattern of gradual and voluntary consolidation into larger corporate units, which has been going on for half a century or more.

It is a phenomenon which is by no means peculiar to the telephone industry. We have a good example of a similar trend in our great automotive industry. Since the beginning of this century, when the automobile was little more than a glorified horseless carriage, there have been hundreds of different makes and manufacturers which have gradually consolidated under vigorously competitive circumstances. This was real direct competiton, out of which came the best automobile business in the world.

In our utility business, where there was and is no direct competition, there has been no need for such a drastic reduction in the number of operating companies. But even here changing economic conditions have had the effect of producing voluntary consolidations over a period of years.

In the electric industry, for example, there are about one-half the number of operating establishments that were in existence during the peak period around 1920. The number of gas companies, on the whole, have shown a gradual decline, despite a greatly increased volume of business due to the introduction of natural gas and to the spread of gas pipeline facilities to all sections of the nation.

It is only natural, of course, that the noticeable decline in the number of Independent telephone companies should give our membership some concern.

But it is an economic fact, and as such it should be considered.

It might be of passing interest to note that despite the great drop in electric utility establishments from the peak period around 1920 (when there were over 6,500) to a low point of less than 3,500 in 1932, the total number has remained fairly constant since that time. So, it may well be that we are going through an economic sweating-out period, which will run its course when our company organizations have reached the point of practical adjustment in relation to economic and efficient operation.

Most of us regret, of course, the passing of the family-type company which was able to make up in terms of extra personal services, through manual operation, for the very small number of stations in the exchange. I think we will agree, however, that modern service demands at least a minimum size standard on which to operate efficiently and economically, and support the kind of equipment which can give our suburban and rural subscribers a quality of service comparable to the service rendered from our city exchanges.

So much for our problems of growth. What can we do about it? As officers and employes of our own companies our duty is clear. It is to assist management in steering a balanced course between the demands of the subscriber and of the investor. But above and beyond that, there is the need to work with each other in solving these problems — to help the smaller companies in particular and to consider the impact of all these things on the Independent industry as a whole. How can we do this? The answer is right here. Right in this room.

If any of you have doubt about that, attendance at this convention and a consideration of this program which is before you, ought to convince you. What your association has done in the past year, can be done even better in the future if we only realize the potential of this instrument within our hands, our own U.S.I.T.A.

Consider well what has been done about better legislation, better public relations, better administrative contacts with Washington and the state capitals at the regional levels. Consider well what we have been able to develop by way of sound advice on better accounting, etc.

This is the mood in which, I hope you will appraise all these things to be unfolded before your eyes and ears at this convention. It is all good; but it could be even better, if we only realize the benefits to be gained from this association work and the immensity of the job ahead.—*Abstract of address presented at the 1954 U.S.I.T.A. convention, Chicago, Ill., October 12.*

Association Activity Highlights

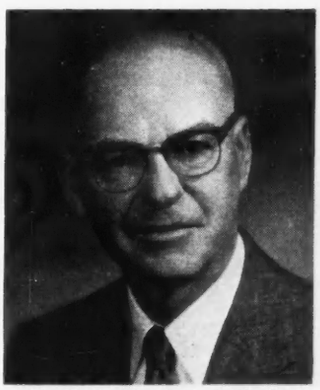
By CLYDE S. BAILEY
U.S.I.T.A. Executive V. P.,
Washington D. C.

"OUR MOST valuable item is the enthusiasm of the men and women who are making real contributions, year in and year out, to the effectiveness of our Association . . ."

U. S. I. T. A. Exec. V. P.
CLYDE S. BAILEY,
Washington D. C.

U. S. I. T. A. 1st V. P.
MERLE M. HALE,
Lincoln, Neb.

U. S. I. T. A. 2nd V. P.
DONALD C. POWER,
New York, N. Y.



U. S. I. T. A. 3rd V. P.
C. W. HAAS,
Big Timber, Mont.

OUR ASSOCIATION has 23 committees and five subcommittees with 188 members serving on them as a labor of love. We also have 14 regional committees with 126 more members serving on them with like fidelity to the best interests of Independent companies.

Our Accounting Committee is considering a request of the Commissioner of Internal Revenue for comments concerning a proposed breakdown of communication excise taxes between local and toll service when companies make remittances on collections.

Our Advertising Committee, pursuant to request, is trying to develop a proposed new design for the emblem of the Independent industry. It is also cooperating with the Telephone Advertising Institute in connection with tie-in advertisements to our national advertising program.

Our Employment Relations Committee, an active one during the past year, serves as something in the nature of a fire engine company prepared to bring the hose into action whenever it looks as if a conflagration is developing.

Our National Defense Committee is currently cooperating with various government agencies having direct responsibility for the development of mobilization plans to be put into effect in the event of national emergency.

Our Committee on Liaison with Private Communication Companies is considering measures calculated to lay the ground work for the taking over by commercial companies of the communication facilities of so-called private carriers wherever this appears to be mutually desirable and in the public interest.

Our Committee on Problems of Small Companies, one of our most active groups, is almost daily concerned with many activities connected with the welfare of the smaller units in our business. It also acts as our official liaison with the REA.

Our Radio Service Committee at our request on a number of occasions has provided competent technical testimony in support of our radio interests at formal hearings before the Federal Communications Commission.

Our Subscriber and Operator Toll Dialing Committee is actively engaged, in cooperation with A.T.&T.

representatives, in an effort to iron out problems connected with subscriber and operator toll dialing. It is scarcely necessary to remark that this new system of using long distance telephone service is one beset with many technical and policy questions.

Our Task Force on National Institutional Advertising has had a busy year. It is largely responsible for the success of our national advertising program inaugurated last May in *Time, U. S. News & World Report,* and *Country Gentleman.*

Our Tax Committee at the next session of Congress will be expected to press for further relief from the objectionable excise tax on telephone service if it looks as if there is any chance whatever of producing results.

Our Toll Compensation and Settlements Committee, one of our most important groups, is currently making studies of the line haul and prorate situation in the interest of laying ground work for increased compensation to Independent companies owning their own toll lines. The committee is also actively engaged in an effort to improve the contour of compensation Schedules A and B. A Subcommittee on Extended Area Service is continuing to give earnest attention to these vexatious problems. And a Subcommittee on Separations is hoping soon to wind up its work of revision of existing procedures relating to separations.

Our Toll Compensation Committee will of course have a comprehensive report of its activities available here at the convention. Copies can be obtained from the U.S.I.T.A. office, Washington, D. C.

In speaking of this committee I can't resist the temptation to draw attention to a very significant statement contained in the committee's report made to our Executives' Conference last May. The report stated that whereas in 1935 the Independents' share of revenue from traffic interchanged with the Bell System was $12 million, by 1953 this share had increased to almost $116 million. It seems almost incredible, and yet the figures are ones upon which we can place reliance. While a substantial part of the increase during the 19-year period came from general stimulation in the use of the telephone, it is also important to bear in mind that a large part also resulted from the effective work of our fine organization carried on through our Toll Compensation and Settlements Committee.

Our Plant Committee has such projects underway as exploring the desirability of standardization of drop wire and cable, studying technological developments in central office and station equipment, reviewing joint pole use agreements, studying developments related to transmission, testing and inductive interference, and a host of other down-to-earth subjects of vital interest to every Independent telephone company.

In addition to the committees I have named, and others which could have been named, our Association has representatives to five outside organizations including the American Standards Association, the Chamber of Commerce of the United States, and the military. I wish I had the time to recount the important work being done by these industry representatives. We have many interests in common with other organized business groups. Our representatives in their demonstrated ability and fidelity to our industry are reflecting large credit upon our organization.

Code Of Personnel Management

WE WHO ARE responsible for personnel management are pledged: —

To place respect for human dignity above all other considerations.

To hold confidential information as a trust.

To aid the full development of each employe's potential for service, and to help place him in the position for which he is best fitted — taking into consideration both the employe's and the company's points of view.

To be thorough in our consideration of employes and their work, and truthful in all of our recommendations with regard to them; abstaining from recommending employes for assignments they are not well qualified to perform — even when so doing will provide an easy solution for a difficult problem.

To acknowledge that employes can be talented and still not best suited for work to which they have been assigned; and whenever an error in assignment is apparent to promptly institute corrective action.

To recognize that employes prefer to know what their abilities and their weaknesses are, rather than to be favored through discrimination and left with a, conscious or unconscious, feeling of inadequacy.

To keep in mind that discriminations, although unintentional, may increase doubts in the minds of even those favored as to whether they also may at a later date be discriminated against.

To discuss with employes all changes that will affect them.

To represent employes' interests to management and management's interests to employes, with loyalty to both; and to try to make plain through thoughtful, rather than argumentative, interpretation that the true interest of one is the true interest of the other.

To teach by example that each of us is responsible for making ourselves as efficient as possible, for producing each day as much as we reasonably can and welcoming at all times suggestions which will aid us in attaining such objectives.

To develop and adopt improved techniques to personnel management.

To establish and diligently support those objectives which will provide greatest benefits — for employes, the public and the company — for the longest period of time.

—Submitted by K. L. Dally,
Lincoln, Neb., to the U.S.I.T.A. Personnel Committee

California's Attempt to Invade the Communication Field

OUR ASSOCIATION has interested itself in a number of radio frequency allocation proceedings pending before the Federal Communications Commission. As will be understood, these proceedings are rather technical in nature.

The most far-reaching of them involves an attempt by the State of California to get into the communications business. In Docket 10777

the State is seeking permission to own a microwave radio station to handle the general administrative communications of state agencies during off-peak periods.

In a related case, F-C-C Docket No. 10200, California has also asked permission to utilize certain radio frequencies to handle Federal Market News Service (F-M-N-S) (Agricultural News) until the State Legislature appropriates money to enlarge the state-owned microwave radio station to handle these communications as well as state administrative traffic.

I need not remind this audience that the United States is the only major nation in the world today in which the communications system is owned and operated in an atmosphere of private initiative. It has prospered in such a climate and provided the best and the most telephone service of any communication system anywhere.

In the two proceedings I have mentioned our Association has taken an active part, advising the Commission that telephone companies are ready, able, and willing to furnish all needed communication service under rates and conditions fully comporting with the public interest. The A.T.&T. and Western Union have taken a similar position. These commercial communication entities have informed the Commission that the private companies are entirely able to furnish the necessary service as a part of their functions as common carriers in a climate of free enterprise under public regulation and that it is not necessary for the State to use the taxpayers' money to bring added facilities into being.

All Pulling Together

THE WORK your Association has done and the goals it has been able to reach are not the product of any one man's genius. We are fortunate in having in our industry many qualified men who have an intense loyalty to the business in which they are engaged.

In any balance sheet one might draw up we would certainly have to put down as the most valuable item on the asset side the understanding, the enthusiasm, the zeal and the fidelity of the men and women who are making real contributions year in and year out to the effectiveness of our Association.

Election Day

GOVERNMENT, meaning all its forms, National, State, City, County, taken together is the most important thing in the lives of all of us and in the lives of future generations. As government becomes larger, more centralized and the choosing of our officials is left to others, it becomes a greater and more dangerous factor in our lives.

If one has any doubt of the truth of these statements one should study European history and the conditions in countries behind what is termed, "The Iron Curtain" and other countries controlled under the same philosophy.

Self-government is not free and it does not last of its own accord — neither is good government free.

Notwithstanding all of this, (which is known to everyone who is willing to think about it for a few minutes) in most of our elections over 50% of the people who have the privilege of voting do not bother to vote. They are quite willing to let someone else select our government officials and thus determine the kind of government we are to have.

Would these same people who do not accept their obligations of voting be willing to turn their paychecks and property over to someone they do not know to manage for them? Such a suggestion is of course ridiculous. Yet the government does get a large chunk of the payroll checks and in addition has control over our liberty.

★ ★ ★ ★ ★

November 2nd is a most important date in most States —

We should inform ourselves by studying the facts about the candidates and make up our minds as to which ones have ability, courage, are honest men and have a sense of responsibility for the office. Men to whom you are willing to trust such important matters.

THEN ABOVE ALL VOTE.

What About The Future?

THERE IS much more that could be said about the activities of our Association. But what I have related may suffice for the time being.

What about the future?

One might wish he was a Nostradamus, or a clairvoyant, or a seventh son of a seventh son, or a master of the crystal ball. The field of prophecy is not one in which mankind has shown the greatest proficiency.

And yet, based on our own knowledge of history, it is safe to hazard one or two observations. The immediate future is undoubtedly going to be governed by two principal things.

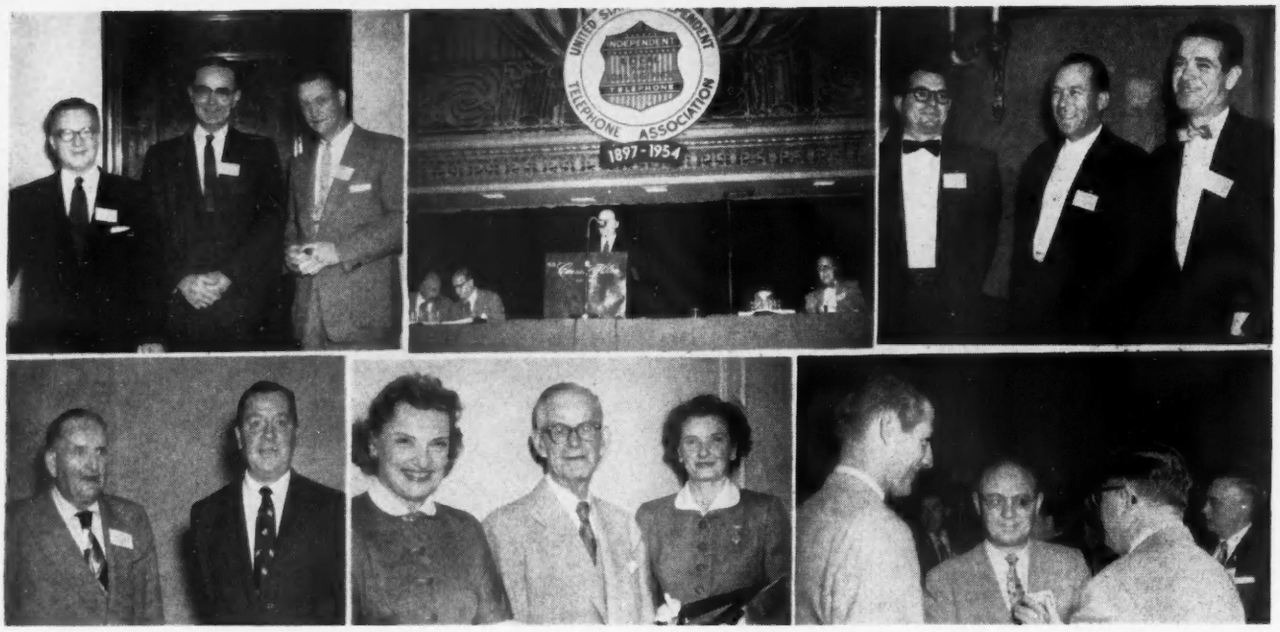
One is whether there is going to be a change in the complexion of Congress following the fall elections.

If there is a change, it does not require a great intellect to prophesy that there will be greater likelihood of an increase in the minimum wage to perhaps a dollar; that the 52 percent corporate income tax will be retained; that serious attempts will be made to rewrite the Taft-Hartley Act along lines demanded by labor unions; that the present policy of our government that the people themselves should have the right to spend their own money and thereby create employment opportunities might be superseded by a restoration of a planned economy; and that the chance of any reduction in the present high level of taxation will be lessened.

Whether a Presidential veto could be sustained on any of these issues would necessarily depend upon the voting margin in the next Congress.

The other thing on which the future depends is of course our foreign relations. You may have noted that President Eisenhower let the American public in on the fact that he had called his National Security Council to his Denver vacation spot in August in order to review the growing seriousness of the Formosan situation. Did his action in telling the people indicate a desire to prepare the mind of the public for some unhappy news in the days to come?

It would be easy to speculate on the possibilities that would confront us in the event of a further deterioration in our international relationships.—*Condensed from a paper presented by Mr. Bailey at the* 1954 *Convention of the United States Independent Telephone Association.*



New Methods Studied at Accounting Conference

U.S.I.T.A. Accounting Conference featured discussions of — (1) Impact of the new revenue code on operating telephone companies, (2) employe relations, and (3) the effect of price level on depreciation.

ORA B. WESTRUP, vice president and comptroller, Illinois Consolidated Telephone Co., Mattoon, Ill., presided at the U.S.I.T.A. Accounting Conference. The meeting, held in the South Ballroom of the Conrad Hilton during the recent U.S.I.T.A. Convention featured addresses by: H. N. Sharrow, R. P. Sullivan, and Leonard Spacek.

Speaking as chairman of the U.S.I.T.A. Accounting Committee, Mr. Westrup presented a brief summary of the matters which have come to the attention of the Accounting Committee since it last made its 1953 report.

"As in prior years," he said, "the committee found itself engaged primarily with proposals on the part of the Federal Communications Commission to amend the Uniform System of Accounts for telephone companies. While many companies find comfort in the exemption granted under the Communications Act of 1934 as amended, they will be concerned nevertheless with the Systems of Accounts prescribed by state regulatory authorities. Since such Systems of Accounts ordinarily stem from rules laid down by the F.C.C. it naturally follows that any change in the Federal Communications Commission system will, in all probability, find its way into the Systems of Accounts by which state regulatory bodies govern the affairs of telephone companies subject to their jurisdiction."

ORA WESTRUP, Mattoon, Ill., presided at the 1954 Accounting Conference.

Mr. Westrup reported that "on at least two matters dealt with during the last year we found substantial if not complete agreement."

"The first matter," he said, "concerned the filing of annual reports by certain Class C Telephone Carriers and other small communication carriers on forms designated 'Statistical Circular No. 3' and 'Statistical Circular No. 2' respectively. On December 30, 1953, the Commission adopted and gave notice of a proposed rule making in Docket No. 10830. In this matter the Commission proposed to rescind the above described Statistical Circulars. The change proposed would have the effect of discontinuing for such companies the requirement that they file annual reports with the F.C.C. There-

after, the association, upon the recommendation of its Accounting Committee, gave its support to the proposed change and finally on February 17, 1954 the Commission entered its memorandum opinion and order and the change in rules became effective immediately. It should be noted that the Communications Workers of America, affiliated with the CIO, opposed the discontinuance of the reports and furthermore requested hearings as a means of presenting oral argument in support of their position. Notwithstanding the foregoing, the change was ordered effective with the reporting year 1953 and the companies involved have since benefited thereby.

"Of even greater importance was the announcement by the Federal Communications Commission on March 31, 1954 of its notice of proposed rule making in Docket No. 10985. The memorandum opinion and order followed on June 9, 1954 and with it a change in the accounting for pension costs."

"The foregoing is in contrast to the old rule under which a portion of such cost might be chargeable to surplus instead of the operating expense accounts. The desirability of such a change should be fairly obvious particularly in the light of rate case proceedings wherein expenses should be presented in their true perspective. Your Accounting Committee likewise supported this proposal and as a result the Association went on record as favoring the change in rules which have since been incorporated in the F.C.C. Uniform System of Accounts . . ."

Referring to the recent announcement by the REA Telephone Operations & Loans Division of the adoption of an accounting policy for its telephone borrowers, Mr. Westrup stated that "under the announced policy each borrower subject to the jurisdiction of a state regulatory body shall keep its accounts and records in conformity with the rules and regulations of that body."

"Furthermore," he said, "borrowers not subject to the jurisdiction of a state regulatory body shall use the applicable Federal Communications Commission Uniform System of Accounts as determined by the amount of the company's gross revenues."

Revenue Code

H. N. SHARROW, vice president, Gary Services & Investment Co., Chicago, explained to the Accounting Conference that a very important new provision of the Internal Revenue Code of 1954 is Section 462. This section enables a corporation on the accrual basis to deduct from its income reasonable additions to reserves for estimated expenses. Until the Internal Revenue Code of 1954 expenses were deductible only after actual payment or when all events had occurred fixing the fact and the amount of the corporation's liability. This practice usually resulted in significant differences between a corporation's income per books and its income for tax purposes since for tax purposes the only addition to reserves normally allowed was for bad debts. The new code will now permit deducation of reserves if they come within the following limitations:

(1) The estimated expenses must be related to income taxed during the year.

(2) The expenses must be of a type which can be estimated with reasonable accuracy.

The deduction will not be permitted for reserves for contingencies.

"Before the 1954 Code," he said, "corporations were rightfully hesitant about using its treasury stock to raise capital, to pay debts, to pay for property or services, to adjust its stockholdings or to build incentives through profit sharing, pension, bonus or stock purchase plans. The old regulations specifically stated that wherever a corporation dealt in its own shares as it might in the shares of another the gain or loss from such

These conventioneers at the U.S.I.T.A. convention were photographed by our roving cameras before and after sessions.

transactions would be taxed to the corporation. Section 1032 of the New Law specifically says that no gain or loss is recognized to a corporation on the receipt of money or property in exchange for its stock including treasury stock. This will permit corporations to accomplish through the use of its treasury stock many objectives which might otherwise need other and more onerous means of financing."

Mr. Sharrow explained that one area where regulated public utilities have received a special benefit not accorded to all corporations is in the 2% penalty tax for filing consolidated returns.

"Section 1503(b)," he said, "specifically exempts regulated public utility companies from the additional 2%. Also with respect to consolidated returns and applicable to all corporations the stock-ownership requirements for filing consolidated returns has been reduced from 95% to 80%. For the first time, however, the new law spells out the various methods that savings from consolidation shall be distributed among the members of the affiliated group. Once a method is chosen it must be followed consistently thereafter."

The choices are:

(1) Spread the tax among the members in accordance with the taxable income each has produced, disregarding the loss members. (If no specific election is made, this is the rule applied.)

(2) Use the same procedure as above except that the tax attributable to any member of the affiliated group cannot be higher than its separate tax return. Any excess is attributed to the members whose tax is lower because of the consolidation.

(3) Allocate the tax to the members on the basis of the percentage of each member's separate return liability to the aggregate separate return liability of all the members.

(4) Any other method selected with Treasury approval.

Discussing benefits put in the law by Congress in order to provide tax incentives to maintain a high level of investment in plant and equipment, Mr. Sharrow said, "The depreciation provisions of the new law should encourage greater use of capital equipment and its rapid replacement."

"For the first time through allowing accelerated depreciation," he said, "the law now recognizes the principle that machinery and equipment and capital goods are of greater value in their early years of use. The use of accelerated depreciation can assure a corporation an earlier recovery of its investment in property and the reinvestment of the cash tax-savings in additional income producing plant will improve future earnings. The employment of the cash tax-saving will also reduce the amount of plant financing which might otherwise be required."

The new rules for accelerated depreciation apply to: (1) New (as distinguished from used) tangible property acquired after 1953; (2) property constructed or reconstructed by the taxpayer after 1953 but only to that part of the cost attributable to work done after 1953 provided that, (3) the property has a useful life of three years or more.

"It may be seen therefore that this rapid depreciation will be available only to the original user of any particular piece of property," he said. "Second hand property and intangible property such as patents, copyrights and leases must be depreciated in the same manner as under the old law. With this freedom to choose your depreciation method under the 1954 Code also comes the burden of understanding each method in order that the wisest choice may be made. The alternative methods of depreciation that may be applied to property acquired after December 31, 1954, are the following: (1) The straight line method; (2) the declining balance method; (3) the sum-of-the-years-digits method; and, (4) any other consistent method."

Employe Relations Asset or Liability

EMPHASIZING his concern over the failure on the part of supervision in general to recognize the effect and ramifications of employe relations on company operations, R. Parker Sullivan, operating vice president of the General Telephone Co. of the S. W., San Angelo, Texas, told the Accounting Conference, — "We are entirely too lackadaisical in our concern of this phase of our business."

"I am," he said, "of the firm conviction that we not only fail to realize its importance and therefore do not devote sufficient time, money and effort to it, but an even more serious indictment is our failure to recognize the direct bearing that our Employe Relations has on all of the results of our various undertakings."

Expressing his belief that one of the cardinal needs in management today is a clearer understanding of the direct effect on company earnings that "Employe Relations" can have, Mr. Sullivan pinpointed some of the effects as related to specific items of operations:

(1) EXPENSE: — Major expenditures consist of labor and materials. A company may have a well developed program designed to improve efficiency that should enable it to reduce its labor costs but the success of such a program will be in direct relation to the degree of cooperation received from the employe group. Although a company's labor relations may not directly affect the price of its materials, the overall material costs may be reduced by a system designed to effect conservative use and encourage a conscientious effort by each and every employe to eliminate waste. Such a program, the same as the one designed for efficiency, will actually be operated by the employe and must of necessity then be dependent to a large extent for its success upon cooperative endeavor.

INCOME: — Demand for telephone service is influenced by the type of service available and by the cost of such service. Telephone services in general are rendered by employes. The most influential single factor in the cost of providing service is the expense involved in labor. Thus, the demand for service is directly affected by employe relations.

SALES: — A comprehensive sales program, along with volumes of advertising material, only places a company in a position to sell. The company still must have a salesman — an employe — before it can actually realize sales.

PUBLIC RELATIONS: — Public relations reaction to a company is one of the most dominating influences on its earning ability. As a result of its important position, all management people have spent time, money and effort attempting to discover

TOP (L. to R.):—WESLEY M. ANGLE, MRS. JOHN VOSS and MRS. ARTHUR F. GIBSON were photographed in the Stromberg-Carlson exhibit; FRANK S. BARNES, JR., Rock Hill, S. C., ERLE S. MINER, safety engineer of the AT&T Co., New York City, and the Signal Corp's RAY BLAIN are admiring an exhibit of the Plant Committee

BOTTOM (L. to R.):—Remington Rand's MATHENY (left) and WHITE (right) explain their exhibit to T. A. SINGER, Dimmit, Texas and his sister-in-law; Iowa Association Secretary BILL MILLER and one of his members visit the Telephone Engineer exhibit room.

some avenue through which public relations could be materially improved. They have all reached the same conclusion — if employes actively participate in the public relations program, its complete success is assured. To enjoy good public relations we must have the cooperation and joint endeavor throughout the company's entire personnel.

RATE APPLICATIONS: — The paramount importance of accuracy in the volumes of figures that are included in exhibits and testimonies and the complete reliance that a company, of necessity, must have in the historical data that has been developed serves as a good illustration of the necessity for cooperation and understanding between the employe recording the distribution of time and expense and the Accounting Department Supervisor who will process it. While it is true that a large part of this information is produced by machine operation and all accounting functions are closely supervised and checked for accuracy, it is nevertheless true that the employe furnishes a considerable amount of the basic information and will, therefore, have a direct influence upon the dependability of the accounting results.

"It does not seem possible," Mr. Sullivan said, "to get away from the fact that no matter what the objective might be or how well we have developed our plans, the accomplishment is made through the cooperation and assistance of our employes. As an operating executive, I sincerely believe that progress, expansion and improvement will be realized first and more profoundly by those among us who have the foresight to recognize our obligations to our employes, to develop a definite Employe Relations Program that will result in a strong cooperative feeling throughout the company, and to those who develop an understanding in all branches of the executive, administrative and supervisory groups of their responsibility in such a program."

Mr. Sullivan emphasized that the type of program must be tailored to the individual company's need but proof of the need for a program of some kind is self-evident.

"To create and maintain the desired Employe Relations," he concluded, "we must realize that it will not just happen but must be developed, for it's a true axiom that we not only discover but we help to create those qualities that we look for in others. Our industry has spent a great deal of time, effort and sizeable sums of money in an attempt to personalize our services to our subscribers. I earnestly and sincerely recommend to you that we devote more time, effort and money in an attempt to personalize our relations with our employes. Dividends will be realized in the field of efficiency, productivity, reduced expenses and

improved earnings if your day-to-day operations are conducted in an atmosphere of cooperation, understanding and mutual interest. Employe Relations can be one of your company's greatest assets, or may represent its most difficult liability."

Effect of Price Level on Depreciation

STATING that depreciation computed on original cost dollars for all property built prior to 1950 is incorrect because of the subsequent rise in price level, Leonard Spacek, of Arthur Andersen & Co., Chicago, told the Accounting Conference that correcting depreciation on old property for the change in price level subsequent to construction would give the same result as computing depreciation on original cost if the price level were reasonably stable.

"I do not care," he said, "to be understood as saying that this is a theory or that we should change our practices, or that regulation should recognize the change in price levels. All we as a firm wish you and the authorities involved would do is recognize the effect of what you are doing. If you or anyone else wishes to pursue any particular practice, you have that right.

"What is being done by providing depreciation on original cost is like a corporation mortgaging its plant to raise cash to pay dividends out of capital surplus. From an accounting point of view, and from the point of view of the law, you can actually do such a thing in some cases without objection. Our job is merely to make sure that financial statements tell what you are doing. The consequences of such an action — paying dividends from capital — fall on those who do it, not on the accountants.

"Therefore, do not misinterpret my conviction as an attempt to influence your judgment as to what you should do. Our only contention is that businessmen issuing financial statements should realize that, because of the inadequacy of present depreciation provisions, the financial statements issued do not tell the truth about the business."

Discussing the reasons given for not recognizing the inadequacy of depreciation based on original cost, Mr. Spacek said that one of the first objections of accountants — both professional and private — is that "if depreciation is adjusted for the change in price level you will show less earnings."

"Note," he said, "that the complaint is not — 'Do you have less earnings' — the point is made that you will *show* less earnings. It seems to me that this kind of argument shows that those who use it just haven't the courage to be truthful. The point isn't whether less earnings will be shown, but whether the earnings now shown really exist. If they do not, there is no choice as to what should be shown by the financial statements. If any proper cost is omitted from income, earnings will be shown at a greater amount than they actually are and the result is no different in the case of depreciation."

Turning to regulated telephone and other utility companies, Mr. Spacek said that some utilities are now receiving a return on a value rate base greater than cost, but they receive depreciation only on cost.

"Assume," he said, "the property cost $100 and the company gets a rate base of $150, which at a 6% return is $9.00. When the property is gone, the customers have given the stockholder $100 on which, at present price levels, the stockholder can get only $6.00. Stockholders and companies alike are fooling themselves if they think this differential in value and cost will continue indefinitely. What is going to happen to the stockholder when that property is used up and retired? There is a compounding of the crime. Not only are we giving him a misstatement of the correct depreciation, but we are telling him that the income from his property is profit, even though every $150 of plant is being sold by the company to the customers for $100, at a loss of $50 which is not being recognized. . . ."

Describing efforts to get recognition of the depreciation problem, Mr. Spacek reported that his firm has been urged by educators and businessmen to qualify the financial statements as not fairly presenting the results of operation, and thus invoke official argument on the point.

"That," he said, "would be the proper course to follow if the income statements were misleading because of some action or nonaction by one particular company. But no one company is permitted by the rules and regulation, which are not under their control, to recognize the effect of these facts which are so clear to most of us. If these facts, which are so clear to us, cannot win acceptance by official professional and governmental bodies that should act upon them, no one company or its stockholders can be arbitrarily saddled with the burden attached to the first one to move toward correct statements. They, too, are bound to take a position reasonably comparable to other companies in their statements of accountability — again unless there is general agreement that the position they have taken is wrong. . . .

"It seems there is only one course we could follow, and that is to explain in every way we can the error that we believe exists in preparing accounting statements so that our contemporaries and responsible governmental authorities could join in recognizing the truth as we believe it exists."

Employe Relations

"YOU AS AN Accounting Supervisor have a direct responsibility in the developing and furthering of the proper Employe Relations within your section of the overall operations. The most important among these responsibilities is that of setting the example of proper Employe Relations for each and every supervisor under your jurisdiction. Remember always that those reporting to you have a very strong inclination to imitate your every action.

"Do not lose sight of the fact that the efficiency and accuracy as well as the expenses of your department are dependent to a large extent on your developing an operation based upon cooperation and joint endeavor among the employes and supervisors. Each and every individual supervisor must be made conscious that he as a supervisor is for his people the one person most responsible for their attitudes toward the management group as a whole. This I firmly believe holds true for each and every one of us regardless of our position in the executive, administrative or supervisory forces.—R. P. SULLIVAN, San Angelo, Texas.

Selling Emphasized at Commercial Meeting

U.S.I.T.A. Commercial Conference discusses—(1) The Power of Advertising; (2) New Frontiers in Human Relations, and (3) the Emphasis On Selling.

KENNETH L. LAWSON, Lincoln, Neb., presided at the 1954 U.S.I.T.A. Commercial Conference. The meeting, held in the Lower Tower Room of the Conrad Hilton during the U.S.I.T.A. Convention, featured addresses by: Mr. Lawson; J. M. Mathes, Robert E. Schwab, and Leslie H. Warner.

Presenting the report of the U.S.I.T.A. Commercial Committee, Mr. Lawson stated that action had been taken on the following subjects:

(1) *State Legislation Making it a Misdemeanor for Failure to Give Up a Party Line in an Emergency*: During 1953 the committee undertook to contact the various State Associations to acquaint them with this legislation and to urge its serious consideration and introduction in the State Legislatures.

A report of the committee members indicates that some encouraging results have been obtained. A number of State Associations are actively sponsoring the movement and it is expected that considerable benefit will be realized not alone in those states that pass the legislation, but elsewhere in the form of publicity, which is equally as valuable.

(2) *Credit Cards*: — During the past year there has developed a very keen interest in the use of toll credit cards by Independent companies. The committee studied several different variations of the Bell System card which maintained the identity of the sponsoring company and also incorporated the standard numbering scheme. Through the splendid cooperation of the Bell System, any Independent company may be assigned a block of numbers for use on cards of their own design or a combination incorporating both the Independent and Bell System Company name.

The use of these cards is one of the most potent toll stimulation activities and should be exploited to the utmost with selected customers. With the rapid expansion of outdoor telephone booths, the toll credit card is welcomed by the highway traveler.

(3) *Outdoor Paystations*: — At least one outdoor paystation in every exchange — that is the goal of some companies today. And at the present rate of growth, the outdoor telephone booth will soon become as commonplace as the corner drug store. As evidenced by public usage this service has won popularity.

The committee urged the Association to utilize every measure to stimulate Independent companies throughout the nation to reap the revenue benefits of the outdoor paystation.

(4) *Toll Sales Promotion*:—With the accent on sales being heard on every hand, the committee believes that it should assume an active role in assisting Independents everywhere in the use of positive and proved methods of stimulating greater use of long distance. These include material for use in toll interviews, give away pieces such as personal long distance directories and advertising. A great variety of material is available and can easily be distributed.

(5) *Model Tariff*: — The committee has assembled several copies of a model General Exchange Tariff for the use of small companies. Such a tariff can usually be filed with the state regulatory body wtih the assistance of the State Telephone Association.

One State Association recently compiled such a model tariff and has been very successful in persuading member companies to permit its filing. The filing procedure is simple and is well worth the small effort in the amount of protection it gives.

The National Association through this committee can act as a clearing house in making information available to State Associations interested in promoting this worth-while project.

In concluding his report, Mr. Lawson stated that the Commercial Committee is deeply concerned that no measure be left undone to stimulate Independents everywhere, regardless of size, to promote maximum use of telephone service and all the supplemental features that enhance and popularize it.

"With the passing months and years," he said, "our Independent industry is steadily improving its place in the over-all field of communications and with this vastly improved reputation goes greater responsibilities."

The Power of Advertising

JAMES M. MATHES, president J. M. Mathes, Inc., New York City, referring to the national advertising program of the Independent telephone industry, emphasized that

How many customers think you're wonderful?

The Leich 700 telephone—builds your prestige as it builds your profits

Try this! Go with your installer when he places some new Leich 700 telephones.

Watch your customers smile when they see the trim, modern telephone instrument you are giving them.

Their satisfied smiles will tell you they've just decided... yours is a fine company. Then—tell them about this telephone. Show them the easy-to-read dial, the handy lift plate, the non-marking rubber feet.

Tell them how the comfortable, shorter handset will make their conversations more life-like.

Show them how, with this modern telephone, they can have their choice of wall or desk installation. If you would do this... very shortly you'd find you had enough good will to last your company a long, long time.

At the same time, this Leich 700 telephone will operate faithfully for years on end, will save you money because it requires so little maintenance.

BETTER TRANSMISSION

The new shorter handset places the transmitter closer to the user's mouth, produces a new high in talking efficiency. Laboratory tests show transmission gains up to 5 decibels with this new Leich 700 telephone.

GREATER CONVENIENCE

Extended dial ring, with numbers outside the dial makes for better visibility, fewer wrong numbers. Handy finger lift plate reduces accidents. Hookswitch latch is available for party line service.

CHOICE OF WALL OR DESK INSTALLATION

It's so simple, so easy, and it will save you a lot of work and worry. This one Leich 700 telephone can be used—just as it is—for either wall or desk installations. You need to stock but one type instrument. And you can give your customers their choice, right on the job, of wall or desk installations.

LEICH

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907
LEICH SALES CORPORATION 427 W. RANDOLPH STREET CHICAGO 6, ILLINOIS
PACIFIC COAST: 2611 SAWTELLE BLVD., LOS ANGELES 64, CALIF. SOUTHWEST: 1227 SLOCUM ST., DALLAS 7, TEXAS

GENERAL SYSTEM

"until our infant program took its first few steps last May, Bell had reigned almost unchallenged as the nation's telephone company for as long as most of us can remember — General Telephone's advertising program being the major exception."

"Independents," he said, "were unhonored and unsung — and if they had passed from the national scene as recently as last year, they would have gone unwept by the majority of the American people. It would have been a grave mistake had your Industry continued to ignore the growing pressure of this obscurity."

Reporting that since May 10, 33 pages of national and trade magazine advertising have been published in behalf of the U.S.I.T.A. and the nation's 5,100 Independent telephone companies, Mr. Mathes stated that by next March, the end of the first year, a total of 55 pages of advertising will have appeared before an audience averaging 5,000,000 people per month.

"Add to this the valuable 'extra' coverage afforded by continuous local tie-in advertising," he said. "Through the Telephone Advertising Institute of Chicago, we offer newspaper mats and printed bill enclosures of national advertisements for sale to operating companies at cost. In the first five months of this service, approximately 28,000 inches of tie-in newspaper advertising and 38,000 bill enclosures have been sold."

Discussing future plans, Mr. Mathes stated that if the U.S.I.T.A. Board of Directors supports continuance of the program, "we plan to extend the current series of advertisements with a new lineup of subjects . . ."

"We might add certain magazines," he said, "to our schedule to broaden both the quantity and the class of reader we are now reaching — more *farm* and *small town* coverage perhaps. More women readers could be brought into the fold with advertisements in one or more women's service magazines. After all, more of the ladies own A.T.&T. stock than do the men. We see a *definite* need for greater publicity coverage of your industry on local, state and nationwide levels . . . We would like to see increased activity and improvement — in — local newspaper advertising; organized local, county-wide and state-wide promotions; and radio and television; to cite but a few.

K. L. LAWSON, Lincoln, Neb., presided at the 1954 U.S.I.T.A. Commercial Conference.

"In time, if brought along and allowed to grow and mature, it will become one of the hardest-working and most efficient tools at your disposal for the purpose of propagating your industry and its success. But it is a *tool* — and it must have your hand to guide it. It must have your constant and active support — your participation in all phases and at all levels . . ."

New Frontiers in Human Relations

DISCUSSING "New Frontiers in Human Relations," R. E. Schwab, assistant manager of employe relations, The Detroit Edison Co., Detroit, Mich., pointed out that every industry today is concerned with improving the effectiveness of its operations.

"Competition," he said, "requires that good service be provided at low cost. New methods and technological changes are rapidly being developed and must be introduced to keep costs down and provide a better product or service."

Emphasizing that at the same time wage costs are increasing, resistance to change makes the introduction of technical improvements difficult and misunderstandings impair the efficiency of the whole organization, Mr. Schwab stated that—"More and more, the problem of effective operations depends upon the solution to the problems of human relations."

"Although many executives," he said, "are inclined to think of human relations as a separate problem — to be dealt with by specialists with as little interference as possible in day to day operations — actually, the major responsibility of management is to build an effective team, which can meet the organizational objectives."

Stating that the organization and motivation of people to get the company's work done in an effective and economic manner is a continuing day-to-day responsibility of management, Mr. Schwab warned that to this must be added a responsibility for operating in such a way as to bring maximum satisfaction to each member of the organization.

In conclusion, Mr. Schwab emphasized that management must turn its attention to its human relations problems if "we are to develop hard-hitting, effective organizations."

"The problems are difficult and special skills are required," he said. "Although we are beginning to learn more about how to organize and motivate people, there is a great need for additional research and day to day application by leaders of industry of those principles which are found to be effective. The absence of a high sense of responsibility for meeting human needs in our organizations means lowered efficiency, poor morale and an invitation to government control and competition. Especially in the so-called public utilities do we have an unusual opportunity and responsibility for finding the right answers to problems of human relations."

The Emphasis Shifts To Selling

POINTING OUT that if the industry is going to continue to grow and develop and realize a satisfactory rate of return on its invested capital, it is necessary that more and more emphasis must now be placed on selling its services, Leslie H. Warner, president of Leich Electric Co., Chicago, emphasized — "We are returning to a buyer's market, and we must compete with other business and industry for our customers' dollars."

"As a first step in any campaign to sell telephone service," he said, "I want to emphasize the need for exploiting the obvious. You hear a lot about increasing toll usage and stimulating interest in special services, but very little about making certain that we have achieved the maximum fill in the areas in which we operate.

We have become so accustomed to people literally begging for telephone service that we may overlook completely the fact that there are still thousands of homes in which no telephone service is provided. Many of these people can afford telephone service, and they would subscribe to it if a little selling effort were devoted to them. So let's make certain first of all that we have fully saturated the market for our basic service, and this is a continuing job with every new home constructed in your communities."

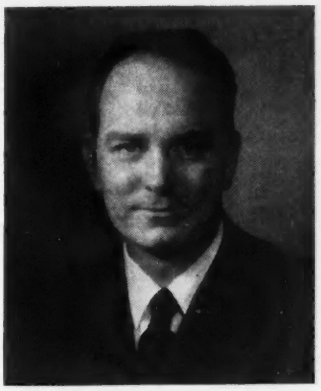
Stating that toll service has for many years contributed a substantial percentage of the industry's total gross revenues, Mr. Warner added that with the proper kind of selling, this percentage could be raised considerably.

"You should remind your customers constantly that no single service which we have to offer gives more pleasure and satisfaction than long distance service," he said. "It reunites families, keeps friends in touch with one another, and brings words of encouragement and cheer across the country in a personalized manner not possible through any other means of communication.

"On my trips to Honolulu, I have been impressed with the excellent job which the Hawaiian Telephone Co. has done in stimulating calls to the Mainland. Their directories devote a full page in the front to urging visitors to the Islands to make use of trans-oceanic service. Billboards and advertisements in the local newspapers continue the theme, and in every hotel room they place a little card by the telephone reading 'HAVE YOU CALLED THE MAINLAND YET?' The resultant increased use of trans-oceanic service has contributed substantially to their revenues, and it might be a good idea for all of you to arrange with your local hotels to have little cards placed in each room reading 'HAVE YOU CALLED HOME YET?' A low pressure reminder like that would probably result in thousands of additional toll calls placed by visitors to your communities."

Discussing holiday business, Mr. Warner stressed the importance of exploiting each holiday as a reason for using long distance.

"The public," he said, "should also be sold on the idea of calls for anniversaries, birthdays, and keeping in touch with children in school or in the Armed services. Bill inserts, local newspaper advertising, special postage meter cancellations, toll credit cards and personal telephone directories are all convenient and effective means for increasing public interest in toll services, and a little effort on your part along these lines will result in very gratifying increases in your toll revenues."



L. H. WARNER, pres., Leich Sales Co., Chicago, Ill., presented this address at the 1954 U.S.I.T.A. Commercial Conference.

Pointing out that business subscribers present many opportunities for increased revenues, Mr. Warner warned — "You can't just sit back and wait for them to analyze their own requirements and come to you with a request for additional and more lucrative service."

"Because our efforts during recent years have been devoted primarily to getting caught up on the backlog of requests for initial service," he said, "I am sure that many of you have neglected studying the service requirements of your established customers. Subscribers' requirements do change, particularly those of our business subscribers, and it is our responsibility to investigate the adequacy of present services and to recommend the use of larger or more modern facilities when circumstances justify such action. It must also be remembered that we now have available many special services which most of our customers don't even know about, and it is up to us to tell them about these special services and to promote their use where they will fill a real need.

"I urge that you keep your business subscribers under constant review so that you will fulfill your duty and obligation to recommend the quantity, type and kind of facilities and services best suited to meet their changing requirements. Convenience systems and P-A-B-X equipment offer particularly lucrative sources of additional revenue, and business subscribers are also interested in such special additional services as telephone answering and recording devices, extra directory listings and directory advertising.

"I cannot emphasize too greatly the revenue potentials of modern P-A-B-X service. Far too often telephone companies have been content to let their business subscribers get along with manual P-B-X service when a P-A-B-X would not only better serve their requirements, but also, would result in increased revenue for the telephone company."

Other revenue boosters suggested by Mr. Warner included: (1) Residential subscribers present many opportunities for increased revenues, and industry members have an unexploited gold mine at their disposal in the market they present for regrades, extension telephones, outdoor and other special signals, telephones for the hard-of-hearing, second lines for teen-age children, extra directory listings, etc.

(2) The revenue potentials of public paystations are surprising, particularly now that outdoor paystation booths have become available.

(3) It is also important not to overlook the substantial contributions that directory advertising can make to revenues.

(4) In somewhat the same category as directory advertising, time and weather announcing services present new and as yet unexploited sources of additional revenue for telephone companies.

In conclusion, Mr. Warner urged industry members to: (1) appraise and analyze their markets; (2) determine the percentage of fill; (3) list and appraise the families not now subscribing to telephone service; (4) consider the possibilities for upgraded service; (5) check into the changing requirements of business subscribers; (6) forecast the possibilities of introducing special services both for residential and business subscribers; (7) study likely locations for additional paystations, and (8) investigate the thoroughness of directory advertising.—THE END

Traffic Conference

Puts Accent On Service

TRAFFIC representatives discuss—(1) Responsibility Accounting; (2) Motivating Manpower; (3) the Chief Operator In Her Everyday Job; and (4) A Recipe for Greater Service.

GEORGE W. ROSE, Tampa, Fla., chairman of the U.S.I.T.A. Traffice Committee presided at the Traffic Conference on Monday, Oct. 11. The meeting, held in the South Ballroom of the Conrad Hilton, Chicago during the recent U.S.I.T.A. Convention featured addresses by Mr. Rose; D. A. Perigo, Everett, Wash.; Walter F. Roberts, Lincoln, Neb.; Miss Mary Halpen, Murpysboro, Ill.; and H. J. Kleinhammer, Bristol, Tenn.

Traffic Committee Report

PRESENTING the U.S.I.T.A. Traffic Committee Report, Mr. Rose reported on several happenings of major importance which occurred during the past year.

"Among the greatest of these," he said, "was the reduction on April 1, 1954 of the Federal excise tax on long distance calls and local service to 10%. This is a step in the right direction and we hope that this might eventually lead to its entire elimination."

Reporting that the Traffic Committee lost the services of two of its far west members during the year: Owen G. Jarboe, Santa Monica, Calif., and Ed Kreiger of Everett, Wash., Mr. Rose said they were replaced by Al Perigo, also of Everett, a newcomer to the Independent scene, Parker Sullivan of San Angelo, Texas and another newcomer, Herman Kleinhammer of Bristol, Tenn.

"The committee," he said, "wishes to congratulate Miss Ruth E. Richards of Springfield, Ill., who became traffic editor of 'Telephone Engineer & Management' and started right off with a series of excellent articles. Congratulations also to Traffic Committee member Allen W. Pyrke on his recent advancement to the position of traffic director of General Telephone. It couldn't have happened to a nicer guy. Many happy returns of the day to Miss Lura Golding of Muskogee, Okla., a former employe of the Iowa Independent Telephone Association for over 40 years who will reach her 90th birthday on October 15.

"The telephone industry missed Mrs. Mayme Workman's column in 'Telephony' between December 12, 1953 and January 9, 1954 while she was recuperating from an operation. We're all so happy that the operation was a success. Congratulations to Miss Emma Yunker, chief operator at Raymond, Ill., who was the recipient of a $400.00 cash Valentine as a token of appreciation from the telephone users of her community."

Stating that the new WH operator practices placed in effect during 1953 have proved to be one of the finest operating practice changes in a long time, Mr. Rose said that a chief operator "told us not long ago that in her opinion it has been the most valuable practice for speeding up toll traffic since the introduction many years ago of the CLR method of operation."

GEORGE W. ROSE, Tampa, Fla., presided at the 1954 Traffic Conference.

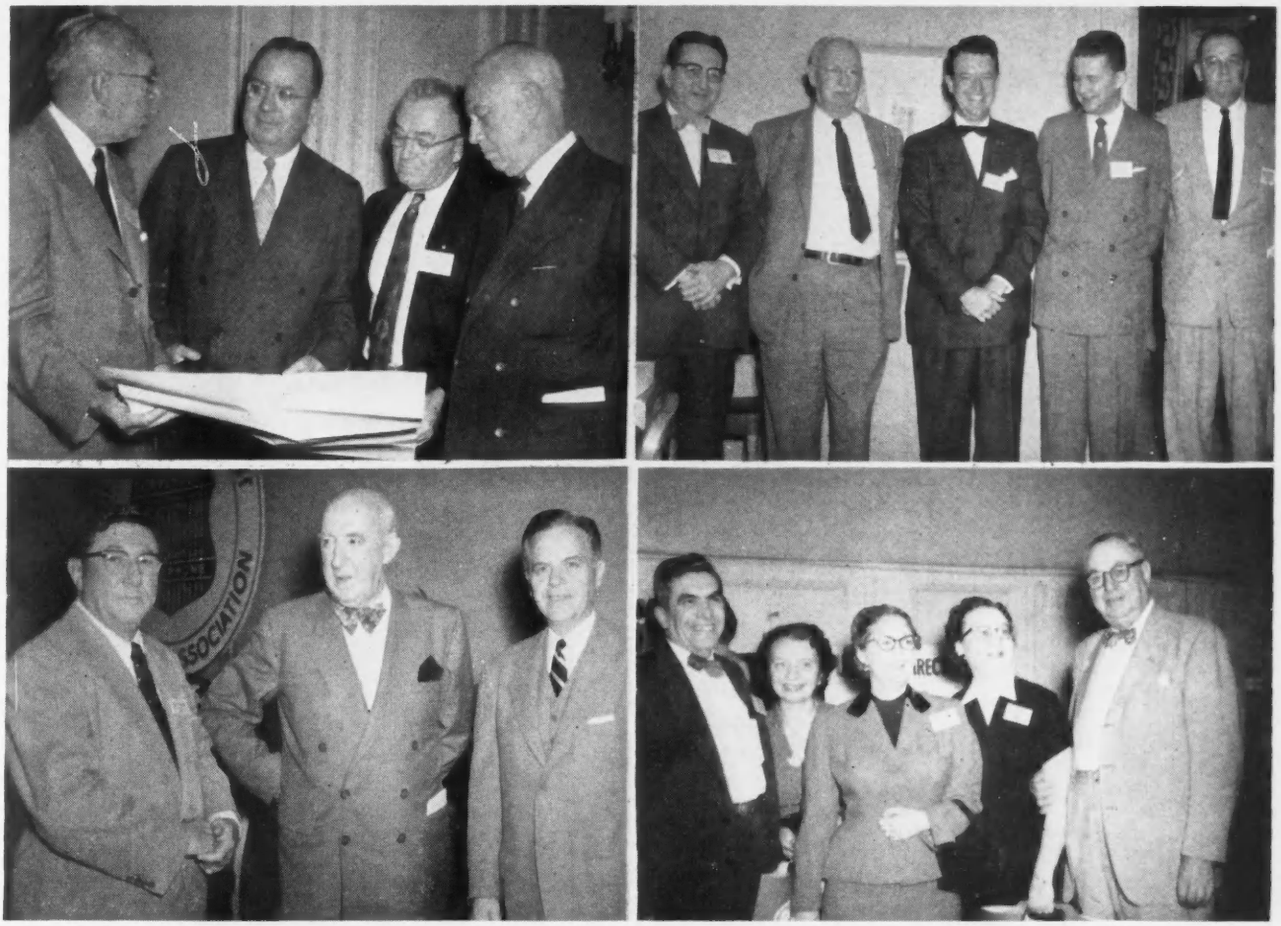
"Not only has it served to speed up the service," he said, "but it has just about reduced in half TX position requirements. The recently instituted AG operating practices will also result in a decrease in TX operation and eliminate many unnecessary operator efforts. Additional operating practice changes just now being put into service in some sections of the nation require the originating toll operator to put her customer on the line with the distant information operator before passing an NF. Tests show that a large percentage of calls are being completed under this method which formerly would have been cancelled. In addition, these tests indicated that many calls, particularly those dialed, reached information in the wrong city."

Commenting that the technical committee of the U.S.I.T.A. Subscriber and Operator Toll Dialing Committee has recently completed working out the overall specifications that must be met for nationwide subscriber toll dialing, Mr. Rose stated that General of the Northwest placed in service on November 28, 1953, subscriber dialing in its area to 4,300 telephones.

"Many more Independents are planning on similar installations," he said, "Michigan Bell at Detroit placed in service during December, 1953 a regional dialing plan permitting subscriber dialing to more than 60 communities in Southeast Michigan and Canada. Operator toll dialing will handle an estimated 60% of all messages this year."

Mr. Rose also reported that automatic answering devices are on the increase and they present somewhat of a long distance operating problem.

"Calling customers," he said, "frequently complain that on station to station calls reaching such devices they receive no satisfaction on the calls. The July 31, 1954 issue of 'Telephony' carried questions and



TOP (L. to R.):—HUGH BARNHART, Rochester, Ind., DONALD S. POWER, New York City, L. W. HILL, Tarboro, N. C., and R. E. SHOTTS, Chicago, Ill., all board members of U.S.I.T.A. discussing association matters prior to the board meeting on Oct. 13; E. S. GERMAIN, CHESTER LOVELAND, RUSSELL LOVELAND, all of San Francisco, GREY BECK, Everett, Wash., and JACK WILLIAMS, Monrovia, Calif., are pictured just before CHESTER H. LOVELAND, president of the California Water & Telephone Co. convened a conference of executives of that company, the West Coast Telephone Co. and Southwestern States Telephone Co., BOTTOM (L. to R.):—FOSTER B. McHENRY, Jefferson City, Mo. (left) and U.S.I.T.A. executive vice president CLYDE S. BAILEY, (right) congratulate RAYMOND MOLEY following his address; WALTER WRIGHT, San Angelo, Texas (left) and S. A. (GUS) LANE, Russelville, Ark., and some of the ladies in attendance at the convention.

answers by Mrs. Mayme Workman on the subject.

"On the West Coast, one of the larger Independents is using an automatic punch card system in producing toll supplementary peg counts. Toll tickets are forwarded to the general offices where all information on the ticket is punched onto a card. This certainly sounds like a quick way to arrive at a weighted coefficient. Many Independent telephone companies are out selling service again and encouraging the use of more and more long distance. It has been found that it certainly pays dividends in increased local and long distance usage to pay more attention to PBX's."

Responsibility Accounting In the Traffic Department

AL PERIGO, general traffic superintendent of the West Coast Telephone Co., Everett, Wash., outlined a traffic expense control plan which is working for the West Coast company.

"About two years ago one of our executives began talking about 'Responsibility Accounting'," he said. "At the start he was wondering as to its value in the telephone industry and then when he was convinced of its value we all began to talk about methods of setting it up. The success of any plan is dependent on preparation — the laying of the foundation. While it is sometimes possible to build a house first then put the foundation under it, there certainly is no argument against building the foundation first.

"Any budget and control plan to be successful must be simple, flexible and provide danger signals to avoid trouble.

"There are very few people who can talk in terms of millions of dollars and really know what they are talking about, but all of us recognize pennies. We decided to talk about pennies instead of the problem of millions, so at a Supervisory Conference it was pointed out that anyone who stands at the curb and throws pennies in the gutter, day after day, is believed to be crazy — at least eccentric. Then we said, 'At our present operators wage rates, we throw a little over two cents down the drain for every minute of wasted time — whether it be idleness or doing a useless job, — and when we do this day after day surely we must also be crazy — or at least eccentric'."

Mr. Perigo reported that immediately after this talk a "Weekly Traffic Record" was started. This form shows the number of operators scheduled for each half hour of the day. The office supervision is then

Though each successful company has its own system for promoting P-A-B-X, all agree on one salient point: there's nothing like personal calls to bring in the contracts!

How to get P-A-B-X business

Home Telephone and Telegraph Company
Fort Wayne, Indiana

"Our initial approach is usually a personal call. We follow up this call with a letter outlining the facilities offered by the system recommended, and the letter in turn is followed up by personal calls until the customer reaches a decision.

"In selling P-A-B-X, we stress the flexibility of the equipment, which in many cases is designed to meet the specific needs of a customer. We show the customer the ease with which the equipment can handle his communication problems and can reduce operator hours as compared to an all-manual system. This is a very important consideration today.

"We train all our commercial employes in the operation and use of P-A-B-X systems."

The Home Telephone and Telegraph Company operates 10 offices and 50 P-A-B-X's.

Jamestown Telephone Corporation
Jamestown, New York

"We solicit P-A-B-X orders by personal contact. Our commercial department is always watching for signs that P-A-B-X service is needed: business growth, new buildings, reports of inadequate service, and those trouble reports where no equipment failure is found" (which indicate that facilities are not faulty, but inadequate).

The Jamestown company studies the prospect's needs and presents a carefully worked-out proposal based on them, in which the advantages of the recommended equipment are noted. Inquiries draw a personal call by a company-trained man, and are then placed on a list for periodic follow-up.

The Jamestown company considers P-A-B-X a good profit item because "extra extensions are used for inter-communication, and line rates are higher." The company operates 12 offices and 33 P-A-B-X's.

Be sure to send for our helpful new sales kit! Packaged in a convenient folder, it contains a meaty sales manual outlining our big P-A-B-X selling plan, a *different* and effective direct-mail folder, general P-A-B-X system catalog, individual systems and service folders, sample survey, proposal, contract, and result-getting sales letters. Ask for the kit, plus *quick delivery* schedules on stock P-A-B-X switchboards.

Mr. C. D. Ingebrand, Commercial Mgr., Home Telephone and Telegraph Company, Ft. Wayne, Ind., calls on a potential P-A-B-X customer.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

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required to show on the form how the actual number on duty varied from the schedule and note the reason. This is done each half hour. Traffic conditions are entered as High, Low or Normal. This appraisal is made on the basis of the number of people actually at the switchboard. By doing this each half hour the supervisor must take the time to actually observe what is happening. "Normal" means that traffic is being handled satisfactorily. "Low" means there are idle hands or more than one operator reaching for the same signal. "High" means too many signals are standing too long.

"Every day is peg count day in the manual offices," he said, "but the meters are read only at midnight. The totals are shown on the bottom of the form, as are also the toll tickets written and completed. In offices where there are separate Information positions a supplemental form is used.

"Regular review of the Weekly Traffic Record indicates the spots where action should be taken on schedule changes, whether absence should be replaced, and often attracts attention to items that are wasting time. As an example of the latter it seemed that a lot of time was used in attempting to complete station calls when no answer was received, and it was frequently found that when we were finally able to reach the called station the customer had already talked on the call. We decided to experiment and ask the customer if he would place the call again when ready. The result was a saving of many minutes and many pennies daily. This practice has now been standard with us for almost a year."

According to Mr. Perigo, the "Weekly Traffic Record" directly relates the actual day to day and hour to hour conditions to the actual force on duty rather than the theoretical relation which is developed through the "cumbersome method of hourly peg counts, experience factors, and theoretical force requirements as read from a table."

"The next step was to prepare a budget by months and by exchanges," he said. "The original budget was prepared in our general office for one reason only; namely, to illustrate a method that could be used, but the machinery was set up whereby our field organization made revisions and future projections. . . . We set the method and the guides, then ask our field people to tell us how much it is going to cost to operate their respective units."

Commenting that Central offices are different and "one of the easiest mistakes you can make is to say 'Your cost per thousand units should be reduced from $10.00 to $9.50 because that is what it is in Office A'," Mr. Perigo said, "It is wrong to ask a chief operator why her costs are different from another office because she isn't expected to know the conditions in another office."

"Such a question can be asked of a District Superintendent who is in charge of both offices and in answering the question she will find things that each Chief Operator can improve," he said. "It is quite possible that in one case there will be a lowering of costs and in the other the costs may go up — with corresponding improvements in the service.

"When it comes to budgeting we, in the Traffic Department, are more fortunate than in the other departments because generally 'Operator Wages,' the 624 Account, is such a high percentage of the total that if we control that, we control our total. Associated with this is, of course, the Training Expense, Account 627. We are convinced there is a very direct relationship between the two. The better trained operators are, the greater is their efficiency and, therefore, the Operator Wages Account becomes less.

"The Traffic Supervision, Account 621, is controlled from the General Office so our field organization has no need to budget this item. The account for Postage, Printing and Stationery consists principally of the cost of toll tickets and the postage on them and will, therefore, vary with the number of tickets. The Traffic Department has little control over the Central Office House Service Account since the principal items are allocated on the basis of floor space.

"Thus, we come back to the statement on simplicity. Why clutter up the work of the field with the other accounts when they can accomplish their objectives by concentrating on operator wages and training costs?"

Turning to the form known as "Operating Budget Control — Basic Work Sheet," Mr. Perigo stated that each month the budget is reviewed in the light of the current comparison between the estimate and the actual and possibly changes made for some of the months. An estimate is then made for the 12th month. In this way the company has an up-to-date budget for one year in advance at all times.

"In order to measure the results," he said, "A 'Responsibility Statement' is issued each month by the Controller. The 'Responsibility Statement' shows the amount budgeted and the actual expenditure by months and cumulative for the year as well as a comparison of the estimated and actual. There are four sections of the Responsibility Statement. The first section shows the System results by sub-accounts; the second shows the System results by sub-accounts by Districts; the third shows the sub-accounts for each District, and the fourth shows all sub-accounts by exchange, and Journal Entry. The four sections are for the 'responsibility' of the various levels of management. For example, the vice president and general manager receives Section I, the general traffic superintendent receives Section II, the district manager gets Section III, and the district traffic superintendent receives the detail of Section IV. This places the responsibility where it belongs. For example, if the vice president and general manager notes a condition that causes him concern he inquires of the general traffic superintendent who in turn follows the line of organization until the explanation is complete and we *know the exact answer* as to what happened.

"By way of showing what has happened in 1954 as a result of the thinking and processes which have been described it is necessary to give some statistics. Our Message Toll Revenue is 8½% above the same period in 1953 while our Traffic Expenses are only about 1% above. Looking at it another way our toll revenues average 5 cents per station per month higher this year than last while our Traffic Expenses average 8½ cents per station per month *less* than last year.

"Some of this lowering of costs was due to a major dial conversion but on the other side of the ledger wage increases were granted in November 1953, which in the Traffic Department, amounted to about $15,000

TOP (L. to R.):—WILLARD WADE, California Interstate Telephone Co., Bishop, Calif., introduced us to the chairman of the board of his company; Telephone Engineer's DON SORENSEN and ROY F. SMITH greet MRS. HELEN WIEBEL CANNON, president of L. H. WIEBEL, INC., Burnsville, N.C.; Raytheon's RALPH RITTER (left) demonstrates new product to boss man JOHN EIBYE, Boston. BOTTOM (L. to R.):—O. C. BAILEY, Chicago; W. G. WINTERS, Houston, Texas; HARRY MCLUSKEY, Chicago; D. J. (CAP) WHITE, Fairfield, Ia.; HOWARD FINE, Topeka, Kans., pictured at Safety Exhibit in Plant Committee Room prepared by Telephone Engnieer's Managing Editor JOHN G. REYNOLDS, right.

more annually than the dial conversion savings."

Motivating Manpower

EXPLAINING that the purpose of a program for motivating manpower is to decrease unused personnel margins and eliminate wasted manpower, Walter F. Roberts, personnel director, Lincoln (Neb.) Tel. & Tel. Co., emphasized that a well trained, highly motivated force contributes to efficient operation which in turn results in good public relations.

"Our association," he said, "is spending large sums of money to enhance good public relations. We can expedite this worthy program by our concentration on employe relations. Public relations like charity begins at home. Every employe is a window through which the public looks at the company. The public sees the company, hears the company, and feels the pulse of the company in its contacts with the employes, either on or off the job."

Pointing out that the old "hired man" method of motivation was to consider wages as the primary and often the only incentive, Mr. Roberts emphasized, "We now know that nonfinancial incentives are even more effective, granting, of course, that wages are reasonably adequate."

"Financial security," he said, "is important but personal or emotional security is also necessary for good job performance. The average employe desires a feeling of stability, recognition, and an opportunity for self-expression. He needs to maintain his self-respect and must be made to feel that his personal dignity is being preserved. Good working conditions, pleasant relationships, sharing responsibilities, praise for accomplishment, progress opportunity, health and safety provisions, and recreation and social facilities all contribute to the emotional security of the individual. Thus the appeal may be to the whole man as a person rather than regarding him as a cold machine in the production process."

Commenting that the process of motivating manpower is something like farming, Mr. Roberts stated — "The virgin soil of our manpower problem is the new employe."

"The fertilizing process begins on the first day of employment," he said. "The first few days are difficult and trying for the new employe. During that time he is forming definite and lasting impressions not only about the company but also about the other people who work there. If the new employe goes home at the end of the first day with the feeling that he is going to like the job, the company, and the other employes, the induction program is off to a good start and your motivating process is

> ***"THE PACE OF our Independent company station growth over a 20-year period has been in the order of 135 per cent, or more than five times the rate of growth of our national population during the same period." —WARREN B. CLAY, U.S.I.T.A. President.***
>
> ***"GOOD MANAGEMENT-employe relations are brought about by the following: (1) Leading instead of bossing; (2) teaching instead of telling; (3) frankness instead of continual suaveness and diplomacy; (4) listening instead of talking; (5) reasoning instead of arguing; (6) trusting instead of suspecting; and (7) joining with instead of doing for."—G. E. KRIEGER, Everett, Wash.***

well begun and may be half done. However, induction is not a one-day or one-week project. It is a continuous process until such time as the employe has a feeling of belonging, as well as the feeling that here he has job security, stability and opportunity. A good induction program will help make the new member feel that the company is his home away from home and that he is one of a happy family of workers all concerned with the welfare of the company. If he is made to feel that he is a member of the team, he is less apt to become a critic of the umpire."

Stressing that the best employe induction program in the world can be sabotaged by poor day-to-day employe relations, Mr. Roberts said, "In the development of an effective program that will help to motivate manpower, we need to know the attitude of employes and how well they understand the company and company problems."

"In other words," he said, "before we can synchronize management and employe attitudes, we need to know something about employe attitudes. In an employe opinion survey recently conducted, we found that 26% of our employes said that the company is not interested in me as a person but only whether I do my work satisfactorily. 33% said the company takes some interest in me as a person but not much, and only 38% said the company takes a real interest in me as a person. On the question of profits, we found only 22% were correct in their opinion of what the company earned, and 27% thought the company made over 10% net profit. On the question of money paid out, 26% thought the company paid more to owners and top management than to workers whereas the figures are nearly 10 to 1 the other way."

To correct these and other erroneous impressions, Mr. Roberts reported that Lincoln Tel. & Tel. Co. made a complete report to each employe of the results of the opinion survey giving in each case the correct answer. This was followed by an effort to step up communication through regular channels, through the company publication, and by an open house for all employes and their families.

"We are also presently holding open house celebrations at numerous exchanges throughout the territory on the occasion of our 50th anniversary," he said. "These are proving to be very helpful in providing employes with greater knowledge of the business and a stronger loyalty for the company. We are also making an effort to expand company sponsored sports and social activities and are putting more emphasis on the presentation of service pin awards at 5 year intervals beginning at the 5th year instead of the 10th. We also provided free vaccination to employes and their families at the time of a recent smallpox epidemic and provide annual vaccination against influenza for all employes who desire it. Our forms committee has just perfected a new progress report form for use in all departments. This is to be used at all progression steps and thereafter at least annually."

In conclusion, Mr. Roberts stated that "Our type of business, especially in the traffic department, requires teamwork and cooperation."

"Cooperation," he said, "cannot be bought and it cannot be enforced. It must be developed like friendship and we can only obtain it by first extending it to the people who work with us and for us. A man may sell us his head and his hands but we must earn his heart, and the manpower we hire lacks motivation without the heart. An employe who does not have his heart in his work can never develop into a highly motivated personality . . ."

The Chief Operator

PRESENTING a paper prepared by Miss Lydia Mielke of the Union Telephone Co., Owosso, Mich., Miss Mary Halpen, division traffic superintendent, General Telephone Co. of Illinois, Murphysboro, told the Traffic Conference — "The real Chief Operator, in her study of Human Relations, will take time to take a self-appraisal."

"She will try to be the leader her people expect her to be," she said. "I think it would be well for every one of you to memorize this quotation by Clarence Frances — 'You can buy a man's time, you can buy a man's physical presence, you can even buy a measured number of skilled muscular motions per hour; but you cannot buy enthusiasm, you cannot buy the devotion of hearts or minds and souls. These you have to earn.' "

Miss Halpen pointed out that understanding, recognition and a spirit of gratefulness are three of the most needed principles in the development of good human relations.

"In our work of understanding people," she said, "we can learn so much through discussion. Do you ask for suggestions — for opinions? First of all they stimulate within the person a feeling of worthwhileness. You have come to them in a spirit of seeking and sharing and they summon from deep within and give it to you with pride. And how often you can put into use the thoughts given to you and whenever you do, then the individual has put a part of herself into the plan and the company and her interest and enthusiasm increases."

Touching upon recognition, she asked — "Why is it so hard to find time to give recognition for good work — and effort and good intentions."

"Remember," she said, "there are five words that mean so much to people — *'I am proud of you.'* An emergency arises — everyone gives of their time and good will. Do you tell them of your appreciation? One of your people contributes notably to the community. Do you take time to give recognition? Someone works hard to improve her work, to master a shortcoming, an unusual busy day at the office. What do you do about it? Do you tell her — 'I am proud of you'?

"Words that build from within and we see structures of a new spirit and a new will to do good rise and tower within a short space of time. We believe in these words. Why is it so hard to speak them?

"Then there is gratitude. Do you show your appreciation? It means so much to people to hear — 'Thank you for helping me' — 'Thank you for your good work' — 'Thank you for the part you played in making this undertaking such a success.'

"Again we feel the spirit of gratitude. Why is it so hard to put it into words? In my work I see so many hurts, so much confusion and also resentment because time is not taken to study and to analyze people and situations — to understand — to give recognition and to appreciate. You, Chief Operators, have such a wonderful opportunity to help and inspire people.

"I hope you always have time to

listen — for through listening, we learn many things. There is more to listening than just waiting for an opportunity to speak. Have you found it difficult to be a good listener? Is it because, in your position, you are accustomed to making decisions, directing people, etc.; and, as a result, you want to tell them instead of encouraging free discussion and listening to them? To be a good listener what do you listen for? Is it not: (1) What the person wants to say?; (2) What she does not say?; and, (3) What she cannot say without your help?"

Miss Halpen emphasized that it is not difficult to listen to what the person wants so say, but "it is in the listening to what she doesn't say — to what she cannot say without your help, that you find the key to a better understanding, to better Human Relations."

"I hope," she said, "you always take time to consider, to weigh all facts before taking action, to touch the good in those who come to you in trust and confidence. I hope you are never too busy or too hurried or too concerned with the material part of your job to fail to give of your time, of your talents, of your leadership. I hope you always have time to be friendly — to smile — to laugh — to be concerned — to be sympathetic. You never know how many lives you touch in the hour you spend with your people."

A Recipe For Greater Service

POINTING out that good service results from the attitude as well as the proficiency of the individual employe, H. J. Kleinhammer, traffic engineer of the Inter-Mountain Telephone Co., Bristol, Tenn., outlined the following basic principles of producing better service which can be practiced to some degree in every company regardless of size.

(1) CREATE THE PROPER ATMOSPHERE: — A spirit of cooperation and eagerness, alertness to every new possibility, taking interest in the endeavors of the individual, will do much to encourage initiative and enthusiasm. The policies, objectives, and limitations, should be clearly and freely discussed among the management group who will use and develop them. If an employe knows what the objective is and the reason why, then is allowed freedom of thought, a feeling of subservience will give place to understanding and unfoldment. He will cultivate a desire to render greater service and find better ways of doing it. Suggestions should be encouraged and recognition given where it is due. Of course mistakes will be made, but through them if without condemnation, the employe will sharpen his judgment and develop responsibility.

(2) PROVIDE GOOD SUPERVISION: — The service-minded supervisor today has a two-fold responsibility if she is to render greater service. One — the development of an employe's technical skill or proficiency. The other — seeking out and developing the mental attitude of initiative, enthusiasm, desire to excell, loyalty, friendliness and teamwork. She must win the confidence of her people through a genuine desire to assist and teach them. She must manifest dignity and assurance and express an immeasurable amount of tact and patience.

(3) HAVE A CAREFULLY PLANNED TRAINING PROGRAM: — Whether the job be that of operator, supervisor, traffic manager, engineer, or any other of the many classifications, a person filling the position must learn the "whats, whys, hows and whens" common to the job before he can perform it. A stranger in a telephone office could not establish a connection at a switchboard, except by accident, until he had learned some facts about the job. No matter what the job is therefore, learning must take place. Most companies today have some type of training program, and it should be kept in mind that an effective training course is just as necessary, if not more so for supervisory people as it is for student operators.

Discussing the learning process, Mr. Kleinhammer said, "A person learns by associating two conditions. Therefore the instruction should be designed to present these conditions clearly, one at a time, without interference, and repeat the association until learning has occurred."

"Use the perceptive senses, Hear — See — Feel," he said. "On each item to be taught, suitable time should be devoted to discussion, to demonstration, and to practice. Learning is based on past experience. Therefore design the program to start with the student where she is. Then add to her knowledge on a step-by-step basis, utilizing in each step the knowledge learned in previous steps."

Turning to the problem of teaching, Mr. Kleinhammer said, "We must develop a system with guides and equipment before actually starting a class."

"We should select a qualified person as an instructor," he said, "who expresses outstanding qualities of service-mindedness, helpfulness, patience, loyalty, etc., those attitude qualities which we discussed earlier. She should be able to weave them into her training program so as to reflect them into the thinking of the student. She and her students must of course be detached from all other activities which would interfere or distract.

"A training guide or outline should be prepared which includes every condition to be taught. Each of the various calls or conditions should be broken down into the individual steps, the same as a recipe for baking a cake might be outlined. The training program should be scheduled, allowing adequate but not excess time for the discussion, demonstration, and practice of each call. Drills for developing speed and accuracy should be included.

"Training facilities should be provided where the calls or conditions can be demonstrated without interfering with regular service. Here we may utilize spare positions and facilities, or if they are not available, a suitable imitation or facsimile board may be constructed.

In conclusion Mr. Kleinhammer summarized this "recipe for greater service" as follows: —

(1) The product we sell is service.

(2) Good service stems from a desire within the individual employe to improve or excell.

(3) The ingredients used are money and materials, tools and telephones, cable and central office equipment.

(4) The attitude as well as proficiency with which the employe uses the companies' resources determines the quality of the product.

(5) Some basic principles for improving the operator's attitude and proficiency are: — (a) Create the proper atmosphere; (b) provide good supervision, and (c) have a carefully planned training program.

Plant Committee Stages Outstanding Meeting

***PLANT MEN discuss*—(1) *Radio Service*; (2) *Dial Conversions*; (3) *Personnel Training*; (4) *Private Communications Systems*; (5) *Plastic Cable*; *and* (6) *Safety*.**

DANIEL S. SEITZ, chairman of the U.S.I.T.A. Plant Committee and plant superintendent of the York (Pa.) Telephone & Telegraph Co., presided at the Plant Conference, Monday, October 11 and presented an outstanding program which continued the high goals set by previous meetings.

Plant Committee exhibits in Room 523 at the Conrad Hilton Hotel, included the latest in materials, ideas and tools, an attractive safety exhibit, and a display of books on telephone subjects.

Report of the Plant Committee

CHAIRMAN SEITZ started the conference with his report on activities of the Plant Committee. Praising committee members, who spent a great deal of time in the interest of the industry, Mr. Seitz pointed out some of the more important aims and accomplishments of the committee during the past year.

"As expected," he said, "not all of our goals have been realized as yet, chiefly because we have set our sights high and because this labor of love must be done by very busy persons who give freely much of their own time, also their talents. However, you may be sure that all the important jobs started will be completed in due time."

"Because dial conversions still present problems," he said, "especially for the small company, of financing, engineering, construction, etc., a special committee composed of G. W. Miller, chairman, Frank S. Barnes, Jr., Ray Blain and John McKinzie was appointed to formulate fundamental dial procedures and prepare pertinent data on the subject, soliciting cooperation of the following U.S.I.T.A. commmittees, Commercial, Traffic and Accounting, then prepare a new booklet on this very important project. . . . . Unfortunately, this valuable booklet could not be prepared in time for distribution during the convention, however, your Chairman, who attended the meetings on the second day of their deliberations, wants to assure you that the members of this sub-committee are well qualified to handle this assignment and the results of their labor will be of outstanding value to the industry."

Reporting that special emphasis had been placed on Safety, Mr. Seitz stated that a new Sub-Committee on Safety & Publicity with John G. Reynolds, Chicago, as director has been created.

"It was felt that Safety has long been a neglected subject in the Independent field," he said, "therefore, a special effort should be made to provide a safety program that would tend to make the industry safety conscious and we feel that now we are doing just that."

Commenting on the development of subscriber line carrier designed to provide economical service to applicants in rural areas, Mr. Seitz said the Plant Committee has given serious thought to the coordination of the different systems to make them compatible one with the other, in other words, standardizing the systems as to frequencies to be used, etc.

"Each member of the Plant Committee," he said, "has been solicited for their recommendations concerning subscriber line carrier standardizing and a summary of their replies indicates that they are strongly in favor of making the different systems compatible. Your committee has offered to cooperate and assist in any way possible to bring about a solution to this problem of standardization of carrier systems and will continue to do so in the future.

"Notwithstanding the difficulties to be encountered in standardizing telephone equipment, wires, cables, etc., nevertheless, your committee has solicited opinions, collected data in an effort to determine what equipment, wires, cables, etc. that might be standardized to the advantage of the manufacturers and operating tele-

THE WORK your Association has done and the goals it has been able to reach are not the product of any one man's genius. We are fortunate in having ing in our industry many qualified men who have an intense loyalty to the business in which they are engaged.-C. S. BAILEY

phone companies, as well. We are fully aware that it will require a lot of time and doing before the desired results can be accomplished."

Stating that during the course of a year, many requests are received by the Plant Committee and individual members for information and advice on Plant matters, Mr. Seitz explained how the requests are handled:

(1) If the request seems to indicate that any one member of the committee is well qualified to furnish the desired information, the request is forwarded to that person for his attention and reply.

(2) If the request for information indicates that the problem is too involved for any one member of the committee to handle it is forwarded to each member of the committee who writes his opinion and comments submitting them to the Chairman for correlation and reply.

(3) Also, many members of the Plant Committee are contacted directly for data, advice and general information which they are always willing and happy to give to anyone requesting it.

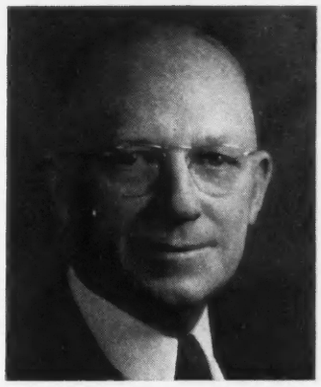
In an effort to be of greater service to all plant personnel, as well as others attending the 1954 convention, an inovation was created by assigning experts in the difference phases of plant work. These person, located in the Plant Room 523 during the convention, answered questions and provided data on all phases of plant work.

Activities of Radio Service Committee

C. H. McLEAN, chairman of the U.S.I.T.A. Radio Service Committee, told the Plant Conference that radio continues to move more and more into the limelight as a communications medium from the standpoint of not only telephone common carriers but many others, including a large variety of private interests.

Discussing the manner in which an Independent telephone company should utilize radio in its operations, Mr. McLean stated that one possible approach for even the smallest Independent company is to establish mobile radio service that initially serves for the most part company vehicles.

"In this connection," he said, "your Association has been trying to secure an exclusive assignment in the manner that power companies operate in the industrial band to serve their own vehicles. This effort has not been without some success for provision has been made in the proposed rules covering domestic radio now under consideration in Docket No. 10821 that will permit common carriers to provide mobile service to their own vehicles in the event the number served is not greater than 50% of the total mobile vehicles connected on any one channel. In other words, commercial public service must be rendered to at least as many radio equipped public vehicles as the telephone company has in operation for its own use. However, there is every reason to believe that if the applicant can demonstrate after having made every reasonable effort that he is unable to meet such a criterion, it is most probable that this stipulation would be relaxed."



DANIEL S. SEITZ, York, Pa., presided at the 1954 U.S.I.T.A. Plant Conference.

Mr. McLean explained that another use of the lower frequencies is in providing rural telephone service to locations not readily reached by wire lines.

"There has been considerable activity on the part of Independent manufacturers lately to provide carrier equipment suitable for rural telephone service," he said, "and it would appear that the next step would be one of dispensing with the physical wires entirely for many of these applications. When such new developments as the transistor and the solar battery are visualized as mediums for providing this type of service, there would appear to be no limit as to what the future possibilities may be in this direction."

Mr. McLean emphasized that radio might well be the means for providing short haul toll circuits or interoffice trunks in situations where wire lines are difficult to construct and maintain.

"A further use of radio," he said, "might make it possible to extend the life of present open wire pole lines that have reached capacity or the providing of standby or emergency facilities to furnish service in the event of total failures due to sleet and other elements.

"Another timely radio application already adopted by some Independents is its use in providing television network facilities in their area. In addition, medium or long haul toll circuits could be economically provided by radio-relay where it is advantageous to do so."

After summarizing activities of the Radio Service Committee, Mr. McLean concluded his report with a reference to the activity among manufacturers to provide new types of carrier equipment, including systems suitable for rural subscriber service.

"As a result of this activity," he said, "the R.E.A. called a meeting to consider the implications of new carrier systems from the standpoint of the users. This meeting, attended by all interested manufacturers, the Bell System, the U.S.I.T.A. and others, generally agreed that the coordination of carrier frequencies of systems now developed or under development was desirable and it was considered to be of prime importance to the industry that compatible operation of the various systems be accomplished to the fullest extent possible.

"It was also indicated at this meeting that the U.S.I.T.A. was in a favable position to bring about this coordination and that it might well be carried out in a manner similar to that of the Subscriber and Operator Toll Dialing Committee now handling a similar question involving both manufacturing and operating. Recently a subcommittee of the Radio Service Committee, consisting of the Chairman and two members, was appointed by your Association to consider the question of carrier coordination and this work is currently in progress."

Liaison With Private Communication Companies

PETER A. NENZEL, vice president of the California Water & Tele-

TOP (L. to R.):—Group from the Sherron Metallic Co., Brooklyn, N.Y., posed around the booths they manufacture; WESLEY LOOMIS, III, and ROLAND T. BEARD were the executives representing the Loomis Advertising Co. exhibit. BOTTOM (L. to R.):—The Stromberg-Carlson microwave exhibit pictures RCA's ED HART (left) and Stromberg-Carlson's JACK CORNELIUS (right) describing the equipment; COL. GUSTAV HIRSCH, Columbus, Ohio, was busy greeting friends and customers in his exhibit room on the 5th floor of the Conrad Hilton Hotel.

phone Co., San Francisco, stressed the fact that the problem of private communications systems has become a matter of considerable importance in the communications industry. Pointing out that the right-of-way companies (pipelines, power companies and railroads) have a capital investment in their business of nearly $80 billion and about ¾ billion in privately owned communications, Mr. Nenzel said—"these ribbon-like utilities are spending this year approximately $5 billion for new construction, modernization and rehabilitation."

"Economic-wise," he said, "this could mean as much as $25 million for new and additional private lines and radio facilities plus substantial sums which many will spend to strengthen existing communications plant. The power industry alone has plans to triple its investment in power facilities over the next 10 years. Last year it took in $6 billion from some 48-½ million customers."

Mr. Nenzel also reported:

(1) In the pipeline field natural gas lines have been growing so rapidly since World War II that there are enough such lines to gird the world 16 times, not counting the manufactured and mixed gas, product and crude oil lines which would add another eight circles around the globe.

U. S. I. T. A. Board Actions

During the recent U.S.I.T. A. Convention the directors of the national association approved the following:

(1) ***The U.S.I.T.A. Executives' Conference will be abandoned after the one to be held next April in Florida.***

(2) ***The board also voted the office of Director of Information to serve as a member of the Washington staff.***

At the end of 1953 the natural gas industry was serving 27 million customers and hundreds of thousands of home owners as well as industrial concerns were eagerly awaiting this service.

(2) The railroads are also moving rapidly to improve their position as the nation's largest carrier of tonnage. Since 1945 they have invested about $9 billion in improvements in their plants. They too have been spending large sums for private lines and mobile radio. Some of the largest privately owned communications systems are in this field, such as the Pennsylvania and New York Central Railroad with investments of over $25 million. This industry needs capital dollars for many items and would welcome your interest in helping it provide communications.

"If you have a railroad, power company or pipeline company in your territory," he said "that you have not called on lately, it would pay you to do so. Remember as a communications specialist you can save

them capital dollars and offer a high quality, fast dependable service at reasonable cost.

"You may have to do a little selling, however, for some of these companies are unaware of the true costs of privately owned communications. This is often the case with side line costs of fast growing industries."

Warning industry members to remember that at least part of the responsibility for privately owned communications in the right-of-way field belongs to the telephone companies, who, over the years, gave them little choice in meeting their specialized communications needs. Mr. Nenzel stated that as a result of "our inability to serve, some right-of-way companies are now so far involved in their own telephone plant investment that the solution at the moment is not an easy one."

"The telephone companies," he said, "must stand ready to provide service as good or better at costs equal to or lower than he can do it for himself. Also, we must be ready to purchase his existing plant at a reasonable price so that he may devote this capital to his business. The value of such purchases has been demonstrated quite a few times by the telephone companies over the last few years."

Describing the case of a railroad which operates between Kewanee, Wisconsin and Winona, Minnesota, Mr. Nenzel reported that it was determined from the vice president and general manager that the road desired some form of fast communications to replace its Morse wire used to handle dispatching operations along a 250 mile right-of-way. Subsequent analysis and negotiations resulted in an order for a full period telephone circuit. The number of drops and the length of the circuit called for "4-wire" operation to obtain the optimum transmission characteristics. Of the 22 stations with full selective two-tone signaling, 10 are located in Independent telephone company territories.

The Companies cooperating in providing this service (which was installed in July) are: City Point Telephone Co.; Community Telephone Co.; Wood County Telephone Co.; Amherst Telephone Co.; Manawa Telephone Co.; General Telephone Co. of Wisconsin; Wisconsin Telephone Co. and Long Lines of A.T.&T.

"Little actual construction was needed," Mr. Nenzel said, "except at one point in the territory of the City Point Telephone Co. where 200 feet of drop wire was placed to connect to the Wisconsin Telephone Co.'s pole line. The remainder of the expenditures in Independent territory consisted of the provision of local channels, all within one or two blocks of the central offices, as the depots were located in the centers of the towns.

"This customer's decision to buy our service rather than to provide his own facilities was based on an intimate knowledge of his own cost factors and the belief that the telephone industry would give him a fast, dependable service at reasonable rates. There is no question but that such an important service as this to the railroad's operations will be in use for many years regardless of a change in business conditions."

Asking—"What happens when we don't attempt to meet the requirements of such potential customers?"

(Please turn to page 80)

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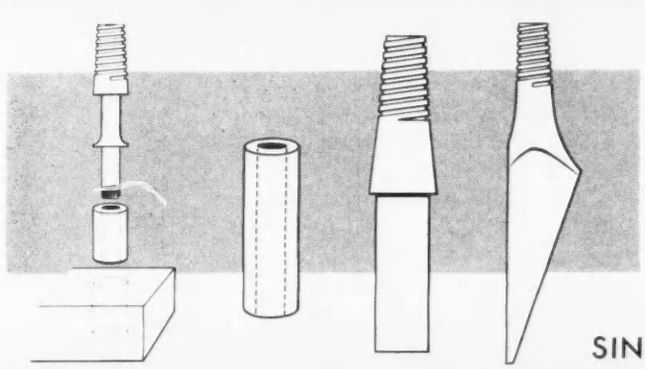

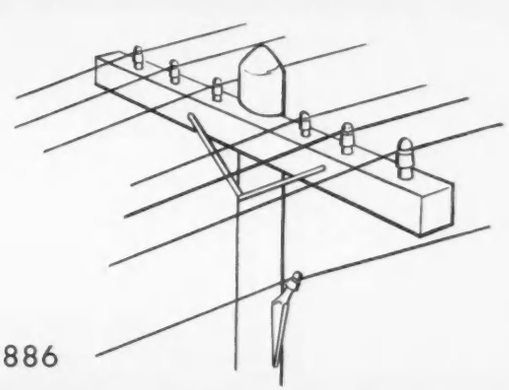

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Mr. Nenzel reviewed the request of a large power concern which asked the telephone company for a full period telephone circuit and exchange service with which to operate a dispatching center. The customer was turned down and the reason given was that such facilities would reduce his existing toll business.

"What happened?" Mr. Nenzel asked. "He moved his dispatching center to another location where service was readily available. The telephone company not only lost the new business and the potential for more over the years from this source but the existing toll business as well."

Referring to a point-to-point radio chart of the systems in service in the right-of-way field, Mr. Nenzel said—"This embarrassing threat to our toll business represents an investment of some $20 million, which results in the loss of considerable private line and message business to our industry."

"Recently," he said, "a check was made of the customer-owned microwave systems in this field which are currently under consideration. If these systems are purchased by pipelines, power companies and railroads, the result will double the mileage . . . . Can we as an industry afford to be complacent about such opportunities for rainy-day revenues? My answer is emphatically No!"

Emphasizing that if industry members are going to participate in this business they must recognize that they must provide a high quality, dependable service to these specialized industries, Mr. Nenzel said, "The Bell System has given us assurance that they will assist the Independents in every way possible in such matters as contract negotiations, establishment of rates for special equipment, engineering and training for plant personnel, and the setting up of preventive maintenance routines."

"We ask you to cooperate fully with the Bell System Companies operating in your territory," he said, "If you have any problems with respect to any matters relating to the acquisition of or providing new service to right-of-way companies as to technical phases, contract phases, or division of revenues, be sure to write to K. L. Lawson, Chairman of the Committee on Liaison With Private Communications Systems, Lincoln (Neb.) Tel. & Tel. Co., and we will endeavor through the offices of the Association to give you all the assistance we possibly can."

Dial Conversion

PLANT CONFERENCE Speaker D. E. McGregor, of the Nebraska Central Telephone Co., Gibbon, Neb., appeared at the second session and presented an interesting report on his company's first dial conversion.

Basing his remarks on his own experiences, Mr. McGregor urged his listeners to tell their Service or Community Clubs "some of the facts of life about the telephone business."

"By letting them help you plan the program," he said, "they will understand some of the problems that you have to overcome. Put some penetrating oil on your imagination and visualize the kind of a building you would like to look at and work in every day. Better yet, tap the imagination of the whole community by asking the school kids to draw a colored picture of the kind of telephone building they would like to have in their community."

Discussing subscriber reaction to his company's first dial conversion, Mr. McGregor reported that probably the greatest satisfaction "is the unsolicited praise we are receiving from our customers on the improvement in service due to better transmission and the speed of completing calls which never can be attained in manual practice."

"Farmers," he said, "have been most pronounced in their praise due to full selective ringing and being able to talk as clearly from their farm home as they can from the booth in the office. The compliments we have had on our building show that small town people appreciate improvements in the business section of their community.

"The financial payoff has come in an increase from 427 telephones on February 28, 1954 to 480 on September 30 and nearly a 50% increase in toll business. By far the largest increase in toll business was from farmers as the quarterly toll billing for September 1, 1953 was $587.00 while the billing for the same period of 1954 was $1,006.00 which was an average of $7.00 per subscriber. A side issue was a great increase in revenue from directory advertising which was handled by specialists."

Mr. McGregor stated that the actual work of converting from magneto to dial operation followed the regular pattern of tree clearance both in town and in the country and the regrouping of farm line subscribers to get them down to about eight on a line. Every inch of cable was inspected as it had been in service for 26 years. All drop wires were checked and all inside wiring was replaced. Insulation tests were made on all cables and 600-volt breakdown tests were also made to make sure the cables would stand up under dial conditions.

The latest type telephones with extended dial rings, 'koiled cords," hook-switch latches on all party and farm lines, and five frequency ringing made full selective service possible on both farm lines and party lines in town. Ten lines were equipped for 20-party ringing so the company will not have to run miles of wire and regroup its farm lines just to connect up one or two more subscribers.

Farm lines were all equipped with the latest type outside arresters and new crossarm arresters were placed several poles from the cable terminals. High capacity power cross arresters were placed along the lines at frequent intervals to afford protection against lightning and crosses with the REA lines.

"Numerous articles and advertisements had appeared in the weekly local paper during the nine months it took for the rehabilitation and installation of the new equipment," Mr. McGregor said. "The Bell Company's sound picture 'When Dial Comes to Town' was shown to the Volunteer Fire Department, the Farm Woman's Club and at a PTA meeting at the High School to which the public was invited. In a one-half page ad a week before the cutover, subscribers were asked to be patient and keep their calling down to a minimum so that we could complete the cutover as quickly as possible.

"As it was impossible to keep an information operator posted on the activities of five installation crews, two of the trunk line numbers to the magneto switchboard were written on the outside of the new directories at the time the dial telephone was installed. In this way subscribers who had been converted to dial could reach the operators on the old switch-

board and find out if the party they wanted to get had been converted or not. As each line was cut off the old switchboard, the jack was plugged with a wad of paper. This might seem like a crude method to companies who have conducted numerous cutovers, but it was a great time saver over trying to arrange to keep every telephone working every minute and our subscribers took it very good naturedly. . . ."

Describing the Shelton, Neb. building, Mr. McGregor said the only wood in the building or equipment is in the fanning strips on the main frame.

Other features of the building are:

(1) The double wall type of construction was used with dark red ranch type brick with wide white morter joints on the outside and pumice blocks on the inside wall. There is a two inch air space and the two walls are tied together with reinforcing wire every third tier of blocks.

(2) The roof is self supporting pumice blocks and concrete with a built up pitch and gravel roof and aluminum flashing to retain the gravel as well as for ornamentation.

(3) The flat concrete roof is troweled so the water runs off at one place at the back with a cement splash block on the ground to catch the water.

(4) The building is heated with a 220-volt thermostatically controlled electric heater. Flood lights above the windows are controlled by a time clock.

(5) A pay station is located in the entrance way which is open to the public 24 hours a day and is lighted by a regular pay station sign controlled by a time clock. Both the outside and inside steel doors have glass windows so that anyone entering can see if the pay station is being used and can watch the equipment operating while waiting for a call.

"In making plans for your building," Mr. McGregor said, "why not invest one more cent for each dollar you have invested and have something which will be a constant reminder of the importance of the telephone in your community. How can you expect small town business men to replace the fronts on their old brick buildings or make other improvements if the organization which has the most customers and the largest investment in town buries its equipment in a morgue on the back alley?"

"A Must — Effective Personnel Management"

STATING that the need of "human relations" is met in today's business world by good personnel management, G. E. Krieger, vice president, West Coast Telephone Co., Everett, Wash., told the Plant Conference that effective personnel management can be achieved by the operation of a personnel department, small or large, working in the following eight general fields of personnel administration of:

(1) Labor relations.
(2) Wage administration.
(3) Labor supply.
(4) Labor economics and research.
(5) Safety and health.
(6) Employe welfare.
(7) Employe training and instruction.
(8) Employe communications.

"And above all," he said, "in developing a complete understanding of *human relations* through the organization. . . . Ambition should be fostered and self-improvement encouraged by providing training and educational facilities for all levels of the employe and management team. Effective utilization of the manpower in our business is our major responsibility."

Mr. Krieger explained that good management-employe relations are brought about by the following:

(1) Leading instead of bossing.
(2) Teaching instead of telling.
(3) Frankness instead of continual suaveness and diplomacy.
(4) Listening instead of talking.
(5) Reasoning instead of arguing.
(6) Trusting instead of suspecting.
(7) "Joining with" instead of "doing for."

Commenting that present telephone staffs are busy and any additional construction or operating activity must be largely carried on by additional people, Mr. Krieger stated, "Enough experienced telephone people to meet this demand are not available. We must hire the best available and train them. In addition, we must give our present people additional training and schooling in better and more efficient ways of carrying on their present jobs and the jobs which we want them to fill in the future."

"Our personnel practices," he emphasized," must also recognize these facts. Many Independent companies operated in areas where sudden and severe growth problems did not occur. With the post-war dispersal of industry away from concentrated industrial areas and with the movement of people to smaller localities away from the hustle and bustle of big-city living, many of them settled in smaller communities served by Independent companies.

"These companies before the growth problem faced them, had relatively simple operations which required a minimum of supervisory personnel. Capable as these management people may have been, their companies' constantly increasing growth problems have seen them spread themselves supervision-wise to the point where operations were not getting adequate management and control.

"Many of these management people also found themselves without the schooling or experience needed in the conduct of larger operations. It has been a case of too few trying to do too much with too little.

"With the growth of many of these operations from a small to a big-time scale, the management problems have become severe. As companies grow there is a tendency of wage-rates to rise; of fringe benefits to increase; of construction and operating costs to soar. This situation must be met by newly-developed, more efficient, construction, management, control, operation and personnel methods. Knowledge of methods must be obtained through education and training. We must go back to school again!"

Mr. Krieger pointed out that through employe education and development companies strive to achieve a balance between minimum first cost (capital investment) of telephone plant and minimum continuing operating costs of that plant so they may meet *three operating objectives*: (1) Good service at adequate rates; (2) satisfactory wages to employes; and (3) a reasonable return on Investment.

"Throughout employe education at all levels," he said, "it must be stressed that business *must make a*

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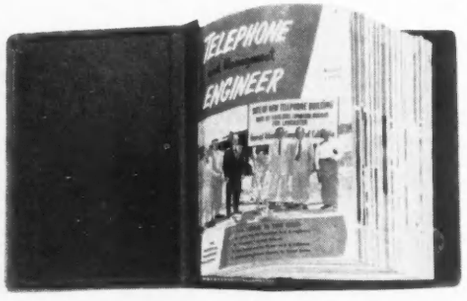

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profit in order to survive. There has been a tendency to emphasize the technical side of operations and neglect the adequate consideration of methods of producing a satisfactory net profit."

Mr. Krieger then described 20 on-the-job and off-the-job things which should be constantly followed in the business to develop employe knowledge and performance. These include: bulletin and training procedure; intercompany exchanging of ideas; suggestion encouragement; trade publication reading; establishment of technical libraries on company premises; telephone convention support; welcoming information from manufacturers' representatives; profesional society participation; apprentice program establishment; house organ publication: reporting on results and future plans to employes; encouraging civic activity participation; conducting economic education meetings; sending technicians to manufacturers' schools; encouraging employes' technical hobbies; establishing responsibility programs on costs and human relations; maintaining safety and health programs; and encouraging employe interest in outside cultural affairs.

"The 20 items relating to employe education and development are only established and maintained through leadership," he said. "Leadership must be developed. *Business can no longer wait for leaders to happen. It must make them happen.* . . . When we say leaders we mean the entire management team from line foreman and traffic, accounting and commercial supervisors up through the president."

Commenting that the business world has recognized the need for additional education for employes and particularly for those who must train and lead others, Mr. Krieger stated that employe education and training includes the formal type of schooling such as the advanced management seminars or courses at universities and colleges lasting from a few days up to as long as 15 months.

"It includes," he said, "the short specialized courses, seminars or institutes, such as the Human Relations Courses, Conference-Method Courses, Specialized Accounting Courses, Conference Leadership Courses, Controllership Courses, etc., also conducted through our universities and colleges as well as by private management development and training consulting firms. . . . The formal type of training seminars are vital to our existence."

Recommending that the programs should be made available first for top levels of management, Mr. Krieger stated, that as the program is carried down through the levels of supervision, the courses should be limited to one or not more than two subjects.

"The full range of subjects," he said, "will be covered for those in the junior supervisory ranks in following sessions. Junior level meetings should not be too long, never more than two hours, and should be definitely programmed. . . ."

In his closing remarks, Mr. Krieger emphasized that the efficiency of operation, the improvement of relations and understanding between employes, the improvement of customer attitudes brought about by better employe-customer relations, all show up favorably at the bottom of the income statement. Checking these credits against the cost of an adequate personnel program I am sure will show us that good personnel management practices more than pay their way. Effective Personnel Management including a real Human Relations program, is therefore a must for every telephone operation!

EDITORS NOTE:—*Due to space limitations the Plant Conference report will be concluded in the next issue with abstracts of papers presented by* P. M. FERGUSON, JR., *Mankato, Minn., and Erle S. Miner, New York City.*

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Designing Modern Communication Lines

By J. N. PETRIE*

PART TWO of Mr. Petrie's article discusses engineering considerations in the design of open-wire lines. Part I of this article appeared in the Sept. issue.

OPEN-WIRE construction had its origin in ground return, direct current telegraph circuits. However, with telephony open-wire has been used extensively to transmit speech currents, first on a ground return basis and later on a two-wire or metallic basis. From one open-wire pair the following additional communication channels were derived: metallic telephone circuits for both speech and d.c. telegraph operation, phantom circuits, and superimposed carrier currents.

Radio broadcasting and tele-photo transmission have also come into extensive use, and with these advances the utilization of the wire facilities has been extended from Direct Current and a band of frequencies of approximately 200 to 3000 cycles originally to about 150 kc with increasingly severe service requirements and proportionately greater difficulty in arranging the open-wire facilities to obtain economical and efficient operation.

Today, open-wire circuits have ceased to be a relatively simple and independent facility that could be engineered on the basis of providing only one type of service. Today, open-wire is a structure from which various types and numbers of circuits are being derived by the application of various new techniques and new equipment arrangements.

The trends indicated above have progressed to the point where it is frequently advisable to engineer an open-wire line on the basis of its most effective utilization as a carrier frequency transmission medium rather than as a voice frequency telephone circuit. This requirement is accentuated by recent downward trends in the cost of carrier apparatus, with further major reductions likely in the future. On the basis of present material and labor costs it frequently is economical to install single channel carrier telephone systems for distances as short as 10 to 15 miles, as compared with placing new wire on existing pole lines.

It should be noted, however, that with the drastic increase in circuit requirements it generally is necessary to consider the application of more than one carrier telephone channel; and, in fact, a very high percentage of the systems installed today, even for distances as short as 25 miles, is of the 3-channel type. Also, the economical high frenquency multi-channel carrier systems available today indicate that such systems will be competitive with voice frequency exchange-type "trunk" cables for distances on the order of 15 to 20 miles. In view of these trends it is desirable to view the open-wire plant largely as a potential carrier-transmission medium and the discussion that follows is based on this premise.

In the engineering of additional telephone facilities it is necessary to take into consideration the following factors:

(1) Existing lines, type and gauge of wires routed over them, and the maximum circuit capacity when these wires are fully developed with superimposed carrier systems.

(2) Probable extensions of existing lines, together with new construction that may be required to care for the need in newly developed areas.

(3) The location of existing exchanges, together with their suitability as repeater stations for existing and new carrier systems as well as strategic locations to serve for new repeater stations that may be necessary for the future.

(4) Entrance and intermediate cables with respect to their effect on carrier system operation and their suitability for the purposes of carrier transmission.

(5) Weather and terrain conditions, especially with respect to the possibility of sleet and hoar frost conditions in winter, long span or other unusual construction, and submarine cable crossings of rivers and other large bodies of water, and other major obstacles that may be involved.

(6) To achieve the maximum service from the carrier investment in sleet areas the greater strength of Copperweld con-

*Mr. Petrie is Manager, Carrier & Radio Sales, Automatic Electric Sales Co.

ductors may be an important aspect.

(7) Other information about local conditions or usages that may have an effect on the open-wire design.

For many years the type of construction employed for long distance telephone circuits has been fairly well stabilized; but the new services to be provided, together with new instrumentalities that can be used in providing telephone circuits has dictated a number of changes in the basic design of the open-wire telephone circuits.

Some of the major considerations which have led to modifications in the design of long distance open-wire telephone circuits are as follows:

(1) A design that will permit maximum utilization of modern carrier techniques.

(2) The minimum use of copper, or other line material, consistent with transmission requirements and mechanical strength considerations.

(3) Adequate provision for mitigating crosstalk, noise, and other forms of interference.

(4) Uniform impedance in all sections of the line and throughout the frequency band to be utilized to avoid undesirable reflection losses or crosstalk resulting therefrom.

(5) Suitable provision for eliminating electrical hazards and lightning interference.

The minimum objectives outlined above must be kept in mind in connection with the uses to be made of the open-wire facilities; and the weight to be given the various factors will depend upon the proper balance between the physical and economic considerations involved.

Types Of Services That Can Be Derived

THE BASIC open-wire telephone circuit, besides its more or less normal voice-frequency use, today generally also provides the transmission medium over which carrier telephone and telegraph channels are operated. It is, however, necessary to have an understanding of the various types of construction and the limitations that may result as to the number and kind of circuits obtainable, and the possible limitations of the voice frequency circuits resulting from the superimposing of carrier systems.

In addition to the several types of voice frequency circuits referred to earlier, which are derived directly from the open-wire plant, every open-wire pair, theoretically at least, can also be used simultaneously for the purpose of deriving additional telephone and telegraph circuits by the carrier current method.

From time to time various carrier systems, providing from 1 to 15 additional telephone circuits, have been made available and utilized in this operation. The more popular systems in the past have been the Western Electric Type "H," which provides one additional channel, and the Western Electric Type "C." Recently the Lenkurt Type 33A has been utilized extensively to provide 3 additional channels, with the Lenkurt Type 42C superimposed to provide 12 additional channels.

Even more recently the trend has been towards economical miniaturized carrier telephone systems that have resulted in the development of Western Electric's Type "OB" system (which provides 4 channels in the frequency range 40 to 76 kc) and the development of the Lenkurt Type 45A (that provides 12 channels in the range between 40 and 150 kc) as well as the Lenkurt Type 45C-B (that also provides 4 channels in the frequency range above 40 kc).

The several carrier systems referred to above can be operated on any or all of the non-pole pair telephone circuits if they are properly arranged for such operation as discussed in greater detail later.

It is also customary to operate a 3-channel and a 12-channel system simultaneously on the same pair, thus obtaining a total of 15 additional telephone circuits. Various other combinations of 1, 2, 3 and 12-channel, or partially equipped 12-channel systems, can also be operated simultaneously, but these usually will require special engineering consideration.

It is normally undesirable to utilize phantom circuits as the transmission medium for carrier systems except under unusual conditions where crosstalk, noise and transmission performance are not limiting. Also, pole pairs often are not suitable for the operation of carrier telephone systems because of their noise and crosstalk characteristics.

Voice frequency carrier telegraph channels can usually be operated over one or more channels of any of the carrier telephone systems referred to above. The number of carrier telegraph channels that can be derived in this manner will vary from 12 to 24, depending on the frequency band width of the telephone circuit and the spacing of the telegraph channels.

Special arrangements permitting the operation of 1 to 4 voice frequency carrier telegraph channels and the simultaneous use of this telephone circuit for telephone message traffic can be obtained in some instances with only a slight degradation of the circuit. This so-called "Speech-Plus-Telegraph" technique has found many applications in private and industrial telephone systems in which this type of operation is acceptable.

The Kind Of Wire To Use

SINCE THE trend is more and more towards utilizing open-wire telephone circuits primarily for the derivation of carrier telephone circuits it is desirable to provide conductors that will (1) best meet the transmission requirements over the higher frequency ranges involved, (2) have adequate strength to provide a satisfactory degree of service continuity, and (3) be as economical as possible. There is no single type of wire that fully meets all of these requirements. It therefore follows that each project must be studied on its individual merit and requirements, and that the wire must be selected on the basis of the gauge and type that best meets these requirements.

The types of wire ordinarily used for long distance telephone circuits are hard-drawn copper, Copperweld (40% conductivity), aluminum, and occasionally steel. In the past, copper wire has been more generally used than any of the others, even though it is more expensive, because it has best met the usual transmission requirements for the combined voice and carrier frequency transmission ranges with the existing outside plant layout. Since there are large quantities of copper wire in the existing plant it will be necessary to consider the best methods for utilizing it as a carrier transmission medium even though in many instances present

types of construction would dictate the use of a stronger wire.

Copperweld wire is usually somewhat cheaper than copper wire and much stronger and thus its use is desirable in situation where this added strength is required, or where the added strength will permit economies in the design of the pole structure. It is particularly well suited for long span construction involving new facilities that are primarily designed for carrier current transmission. The use of Copperweld wire must, however, be reviewed from a transmission performance standpoint for certain applications, for example:

(1) At *voice frequencies* Copperweld wire has approximately double the attenuation of copper wire of the same gauge. This is not significant if the circuits are constructed primarily as a carrier transmission medium because modern carrier systems such as the Western Electric Type "OA" system and the Lenkurt Type 45C-A system utilize frequencies down to 2000 cycles, and the physical voice frequency circuit is not utilized. This type of operation overcomes most inductive noise problems, permits effective impedance matching of cable and open-wire facilities, and avoids the need for voice frequency repeaters and the attendant problems of balancing their line and network circuits.

(2) The attenuation of Copperweld wire is also somewhat greater in the carrier frequency range up to about 30 kc, and this fact must be taken into consideration in designing lines for the operation of carrier systems in this frequency range. In most cases, considerations other than the attenuation of the line conductors will be controlling and, therefore, this factor is usually of relatively lesser importance.

(3) In the 45A and "J" frequency range, Copperweld wire under most conditions will have a slightly lower attenuation than a comparable copper wire and in many instances this is further improved under bad weather conditions when long span construction is involved because of the lesser number of insulators and correspondingly fewer leakage paths at the insulators. See *Figure* 9.

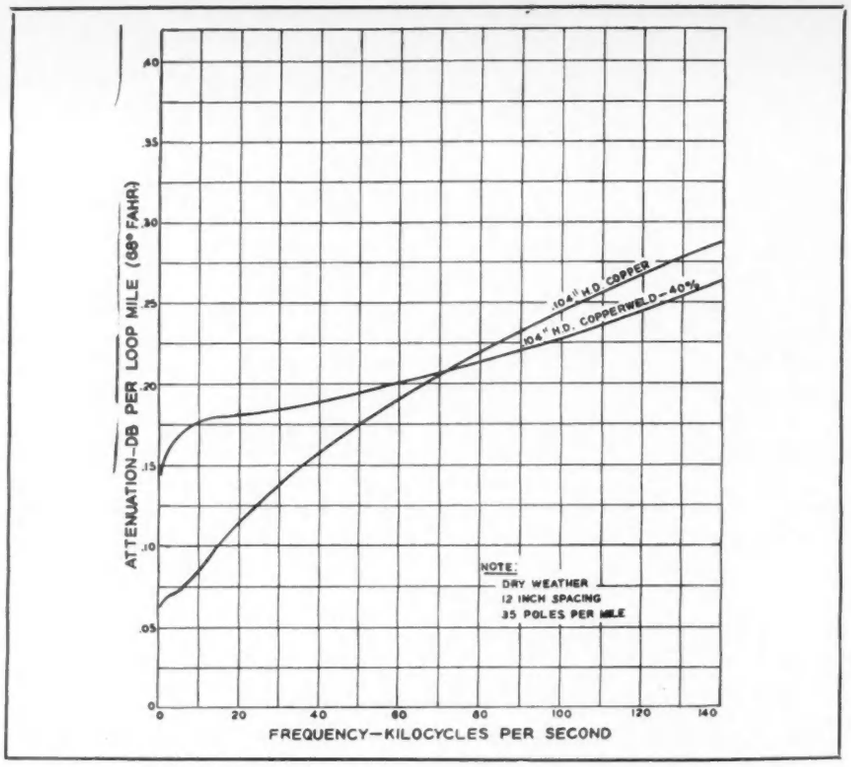

FIGURE NINE: — Attenuation of 0.104 Hard drawn Copperweld 40% conductivity, and Hard drawn solid copper wire.

In view of the present day trend it appears that in a relatively short time all physical circuits, both open-wire and cable, will merely be used as a transmission medium for superimposed carrier systems. On this basis it would appear that any new open-wire construction that may be required definitely should be designed as a carrier transmission medium without regard to its possible incidental use for voice frequency transmission, or the voice channel should be completely abandoned, as is necessary with the Type 45C-A and Western Electric "OA" carrier systems.

A logical use for Copperweld would be for new line construction utilizing

TABLE I

Cost Comparison With Various Conductors, Span Lengths And Number Of Circuits

Number of Conductors	Span Length Feet	Dollars Per Mile			
		HD Copper		40% Copperweld	
		.104"	.128"	.104"	.080"
4	200	$1,099.33	$1,154.45	$1,033.33	$ 937.76
"	250	- - -	993.35	872.70	777.37
"	330	- - -	838.33	718.13	623.02
6	200	1,278.98	1,361.68	1,179.98	1,036.63
"	250	- - -	1,195.03	1,014.05	871.05
"	330	- - -	1,032.99	852.69	710.03
8	200	1,459.65	1,569.90	1,327.65	1,136.50
"	250	- - -	1,395.82	1,154.40	963.73
"	330	- - -	1,228.66	988.26	798.04
12	200	1,924.95	2,090.35	1,726.95	1,440.30
"	250	- - -	1,883.55	1,521.60	1,235.60
"	330	- - -	1,682.98	1,322.38	1,037.05
16	200	2,285.30	2,505.75	2,021.30	1,639.05
"	250	- - -	2,285.40	1,802.80	1,421.45
"	330	- - -	2,073.30	1,592.50	1,212.08

Note #1 - The above data is based on an estimated cost for a 25 ft., Class 7 erected pole, complete with crossarm, pins, and insulators as follows:

For 4 Wires $30.00
For 6 Wires $31.00
For 8 Wires $32.00
For 12 Wires $38.00
For 16 Wires $40.00

Note #2 - The conductor costs are based on present day copper prices and include freight and handling charges but do not include installation of the conductor or transposition brackets since it is assumed that these two costs will not materially affect the relative values of dollars per mile.

TABLE II

Comparison of 40% H. S. Copperweld Conductors and H. D. Copper Conductors for Communication Lines

(Strength and Resistance)

Gauge and Mat.	Cond. Dia.	Cond. Wt.	Rated Strength	Resistance - OHM/Mi. Loop at 20 Deg. Cent.						
	Inch	Lbs./Mi.	Pounds	0 Cyc. D. C.	1000 Cyc.	10000 Cyc.	30000 Cyc.	40000 Cyc.	80000 Cyc.	150000 Cyc.
.128 CW	.128	386.6	2652	16.26	16.58	17.71	18.84	19.48	23.83	32.36
.104 CW	.104	255.	1895	24.76	24.39	26.73	27.53	28.01	30.91	39.45
.104 CU	.104	278.4	886.1	10.30	10.35	13.11	21.41	23.18	31.88	42.50

long spans up to 330 feet or on present rural construction with considerably longer spans up to this length. In situations of this sort a single pair with *appropriate carrier equipment* will provide up to 16 high quality long distance circuits and probably more economically than by any other method. Four such pairs (one cross-arm full of open-wire) will provide up to 64 circuits, which would be adequate for all except the largest circuit groups.

Some of the more important characteristics of copper and Copperweld wires are compared in the following tables and charts. In *Table I*, "Cost Comparison," using various conductors, span lengths and circuits, it is evident that decided economies are possible by utilizing long span construction and Copperweld line conductors for all sizes of line and for all practical span lengths of 330 feet (100 meters) or less.

On the basis of the data shown in *Table II* it will be noted that for the same size conductor the Copperweld line wire is somewhat lighter in weight but more than twice as strong. This important characteristic permits the utilization of much longer span lengths, thus resulting in substantial economies and some slight improvements in high frequency transmission under wet weather conditions.

The trend towards high frequency carrier systems, even in the relatively short haul and light trunk route applications, makes the transmission performance of the line conductors of more than average importance. *Table III*, below, shows the transmission comparisons for normal sizes at 1000 cycles and at various carrier frequencies up to 150 kc.

It is interesting to note from *Table III* that at the higher carrier frequencies the attenuation of Copperweld wires is less than for the same diameter copper line wires. It should also be noted that this attenuation comparison is on the basis of 22 pairs of insulators per km or approximately 40 pairs of insulators per mile. Since it is possible to utilize long span construction with Copperweld, fewer insulators will be required per mile, which will materially reduce the leakage under wet weather conditions and thus further improve the transmission performance at the higher frequencies. In these comparisons the extra insulators involved at point-type transpositions have been

TABLE III

Comparison of 40% H. S. Copperweld Conductors and H. D. Copper Conductors for Communication Lines

(Transmission)

Gauge and Mat.	Attenuation db/mi. Loop - 8" Spacing - 36 Pairs of Insul./mi. - 20 Deg. Cent.											
	DRY WEATHER						WET WEATHER					
	1000 Cyc.	10000 Cyc.	30000 Cyc.	40000 Cyc.	80000 Cyc.	150000 Cyc.	1000 Cyc.	10000 Cyc.	30000 Cyc.	40000 Cyc.	80000 Cyc.	150000 Cyc.
.128 CW	.116	.134	.143	.50	.184	.251	.119	.140	.159	.171	.219	.309
.104 CW	.156	.185	.200	.204	.230	.274	.161	.196	.217	.225	.266	.351
.104 CU	.072	.093	.151	.170	.237	.317	.177	.106	.175	.42	.290	.406

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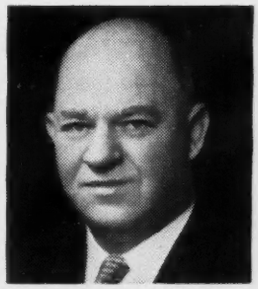

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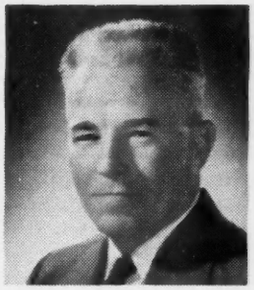

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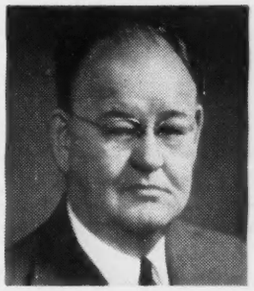

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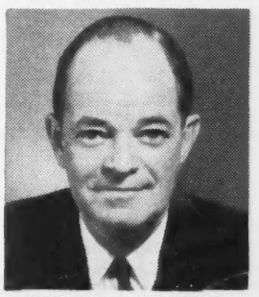

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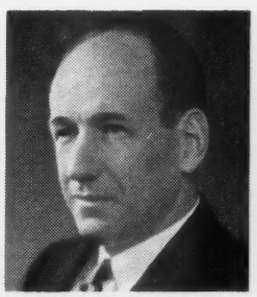

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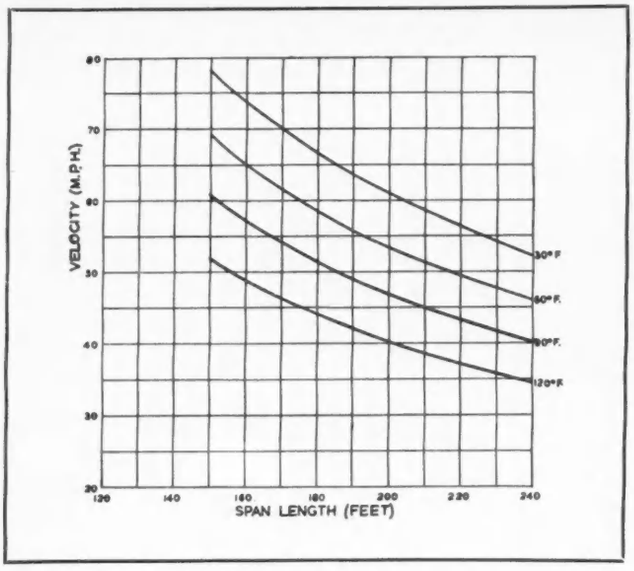


FIGURE 10: — Threshold Velocity curves. Long span Copperweld. 8" spaced (Based on sag data E.D. 1683). Based on data published in The Bell System Technical Journal, Vol. 17, 1938, pp. 195-228.

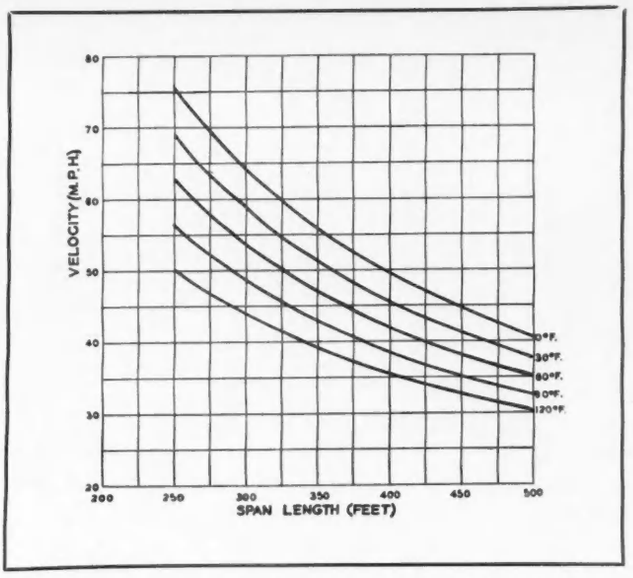


FIGURE 11: — Threshold Velocity Curves. Copper 176' - 225' average spans. Light loading 8" spaced. Based on data published in The Bell System Technical Journal, Vol. 17, 1938, pp. 195-228.

disregarded since the same number would be involved in either type of construction.

The transmission comparison referred to above perhaps can be more clearly shown in *Figure* 9 which graphically depicts the attenuation of .104 mil Copperweld 40% conductivity wire and solid hard drawn copper wire for one specific condition: namely, dry weather 12" spacing and 35 poles per mile.

In the forgoing comments reference has been made to the desirability, for economic reasons, to utilize spans of approximately 330' (100 meters) which implies that this type of construction will meet the normal reliability standards with respect to continuity of service under normal wind and temperature conditions. *Figure* 10 shows the threshold velocity for various long span, 8" spaced Copperweld circuits under different conditions of wind velocity, span length and temperature.

Threshold velocity curves for 8" spaced copper wires are shown in *Figure* 11 under various conditions and for various span lengths. It is interesting to note that 339' long Copperweld spans exhibit essentially the same characteristics as copper spans only slightly over 200' in length.

Pure aluminum wire is used for telephone circuit purposes only infrequently because of its temperature coefficient of expansion but when so used it exhibits essentially the characteristics of bronze wires. Under some conditions aluminum is utilized for telephone circuit purposes in the form of ACSR (aluminum conductors steel reinforced) conductors, especially when placed on extremely long spans on power poles. The transmission characteristics at carrier frequencies for the ACSR conductors are essentially equivalent to the attenuation of the aluminum conductors alone.

Steel wire exhibits much greater attenuation than copper, Copperweld or aluminum. Also its modulation characteristics at carrier frequencies are such as to make it more susceptible to noise and crosstalk effects due to series impedance irregularities, that are largely due to corrosion at the joints. Steel wire is also subject to noise voltages due to magnetostriction effects.

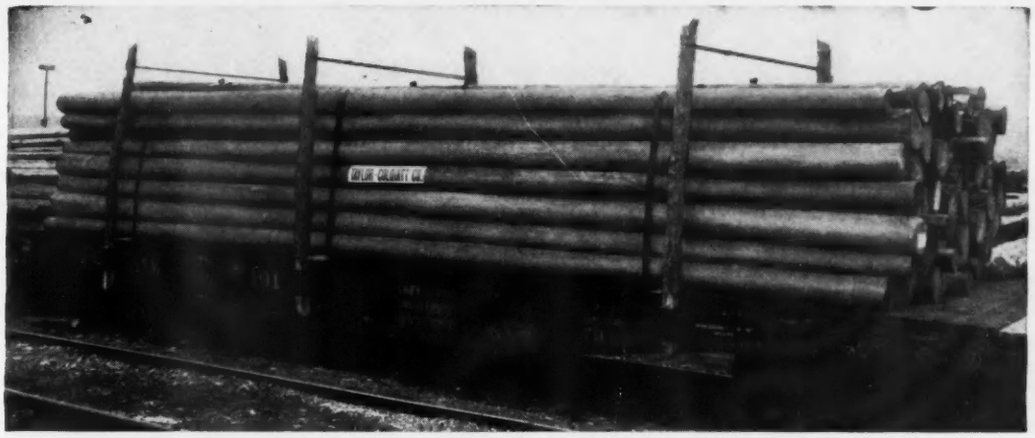
In view of the characteristics of steel wire referred to above it generally cannot be used for long distance telephone purposes except in extremely short voice frequency circuits that are not contemplated as a carrier current transmission medium. In view of the increasing trend towards the universal application of carrier current systems on all open-wire facilities it would appear desirable to avoid placing steel wire in any non-pole pair pin position since it is probable that these positions will ultimately be required for pairs over which carrier systems can be operated.

It is also necessary to consider the gauge of wire to be utilized for any given project to obtain necessary transmission characteristics consistent with a minimum use of copper. It must, of course, be recognized that a certain amount of standardization in any long distance network is desirable, and for this reason considerations other than the bare minimum transmission performance will be controlling in the choice of gauge to be made for any specific project. Usually the items which must be considered are:

(1) The location of towns that are to be served, the location of intermediate sites suitable for the installation of repeaters and the need for intermediate service.

(2) The energy levels that can be transmitted without interferring with other services that may be operated over the same line.

(3) The transmission margins to offset such unavoidable losses incident to the extension of entrance and intermediate cables, the application of carrier filters, etc. In the situations requiring the use of copper wire, either the .104 or .128 gauge will normally meet the requirements from a transmission point of view; however, considerations of strength may require that preference be given to the .128 gauge in medium and heavy loading sleet areas. The use of .165 gauge copper wire is seldom justified today from the transmission point of view. The use of .080 copper wire



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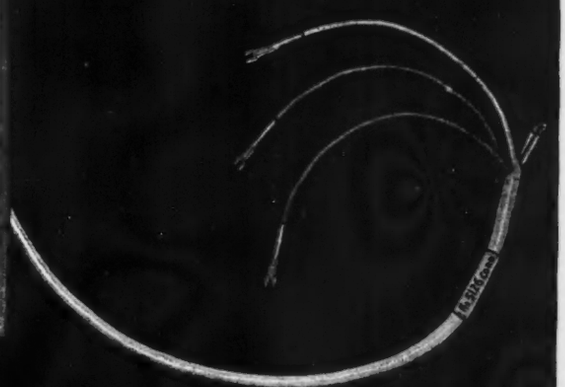

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seldom can be justified on any basis, and in situations where future carrier applications can be foreseen its use may lead to undesirable energy level differences with respect to carrier systems on paralleling larger gauge wires. Also because of its lower strength it is subject to greater numbers of outages resulting from wire breaks, and the attendant loss of the superimposed carrier current circuits.

The strength of Copperweld wire is such that the choice of gauge will usually be determined on the basis of transmission considerations. Actually, the strength is such as to permit spans of up to 330′ even for the smallest sizes that would meet the transmission requirements. From the standpoint of the *carrier transposition* pattern that is required in connection with carrier current systems of the most modern types, 330′ is the maximum permissible transposition interval and therefore would determine the maximum span length which should be utilized.

What Type Of Insulator Is Required?

OPEN-WIRE circuits must be adequately insulated to reduce the effects of leakage that would greatly increase attenuation losses under wet weather conditions, particularly at the higher carrier frequencies. Adequate control of leakage is obtained by insulating the wires from their supporting structure with suitable glass insulators. The effectivesness of insulators under any given condition of weather and for any particular transmission frequency varies considerably depending on the size, shape, kind of pin employed and the electrical characteristics of the glass of which the insulator is made. These various items also will effect the costs of insulating a given telephone circuit. Currently there are three major types of insulators being used on new long distance circuits. These types, together with certain general characteristics, are summarized in *Table IV*.

As will be noted from the *Table IV*, the relative change in loss between dry and wet weather conditions between the DP and the CSC types is two to one. This would make the CSC type twice as desirable from a transmission point of view under wet weather conditions. It also will be noted that the installed cost of this type of insulator is 3 times that of the DP type.

It must also be recognized that in any comparison of this type the number of insulators per mile will be dependent on the number of poles involved and thus the longer spans will permit the use of fewer insulators with a further resultant reduction in construction costs.

It should be noted that due to the generally poor performance of the toll insulators as compared to their installed cost, they would in general tend to be an undesirable choice. With respect to the comparison between the CSC and DP types it must be pointed out that the CSC type is effective in reducing wet weather losses only and has little if any effect on the losses occuring under ice, wet snow or hoar frost conditions.

The general practices with respect to insulators outlined above appear to be desirable for insulating new open-wire circuits. When new circuits are placed on existing lines it may be necessary to take into consideration the manner in which the other wires on the lines are insulated as well as the use to be made of the new facilities. If different insulators are used on different paralleling circuits on any one line, energy level differences may occur under wet weather con-

TABLE IV: — Types of Insulators

Type of Insulator	Type of Glass	Type of Pin Required	Relative Change in Loss*	Comparative Installed Cost	Present Status for New Construction.
DP	Soda-Lime	Wood	1.0	1.0	Available
Toll	Soda-Lime	Wood	1.5	0.8	Available
CSC	Soda-Lime	Steel	0.5	3.0	Available

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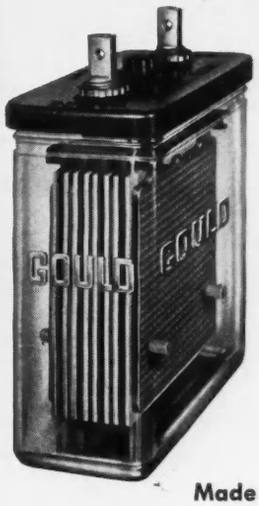

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- One-piece Design
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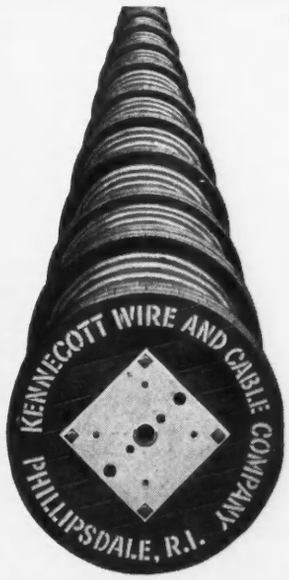
The very simplicity of the Reliable 955A is assurance of long, trouble-free service. Fuses are mounted on a one-piece, low absorption porcelain, well spaced for convenient connecting. Reliable Self-cleaning Sawtooth Discharge Blocks are standard, dissipating static without time lag or danger of grounding the line. The 955A uses No. 77L, seven ampere ceramic fuses.

"Reliable Identifies the Quality"



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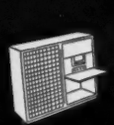
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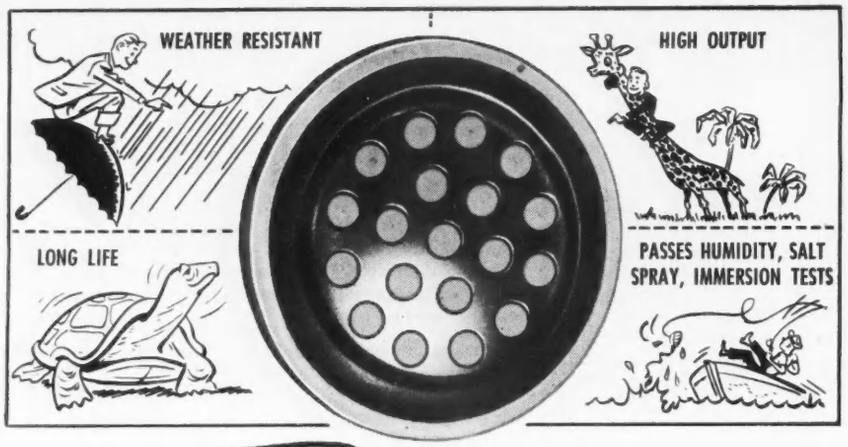

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SAVE OVER 50% IN MATERIAL AND LABOR

(Use Also For Building Repair & Maintenance In Place of Brads, Nails, Adhesives, Etc.)

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- Use L3M 7/16 leg up to 11 strand cable
- Use L3D 9/16 leg up to 16 strand cable

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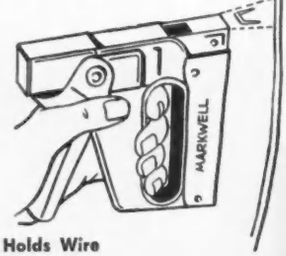

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ditions that would result in undesirable crosstalk effects, particularly at the high frequencies. Aside from the considerations referred to above, it is generally the practice on point transpositions to utilize only the CSC insulators, or their equivalent.—*To Be Continued in the November* TELEPHONE ENGINEER & MANAGEMENT.

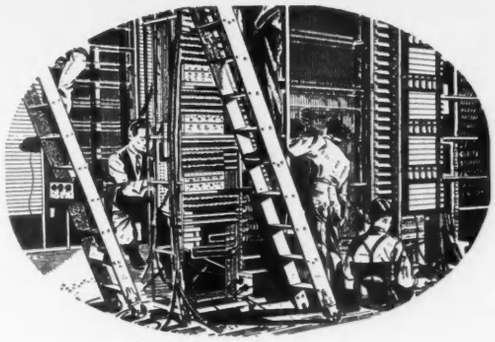
BOOK REVIEW

"The Dictionary of Business & Industry," by Robert J. Schwartz. Published by B. C. Forbes & Sons Publishing Co., Inc., 80 5th Ave., New York 11, N. Y. Price $7.95; $8.95 with thumb index.

BUSINESS AND INDUSTRY, which has grown multifold in size and complexity in the past few years, now has its own dictionary, "The Dictionary Of Business And Industry," edited by Robert J. Schwartz, practicing attorney, clearly defines 45,000 business and legal terms.

The idea for the dictionary came out of the editor's search for a business dictionary to fit the needs of a client who wished to distribute it to their 400 branch offices to standardize business terminology. Important sources were approached, such as the New York Public Library and the U. S. Department of Commerce. A careful search revealed that there was no one comprehensive source of definitions of business and industry.

To supply this important business tool, Robert J. Schwartz set out to assemble, classify and edit a dictionary of business and legal terms. More than 1,000 leading trade associations were contacted for lists of business terms. Leading businessmen in key industries were consulted. Specialized glossaries were procured for the herculean task of assembling the most commonly used business, trade and legal terms. Each term was carefully defined and was earmarked for the dictionary if it qualified as to business usage. A total of 45,000 business terms are included in the finished volume — most of which cannot be found in the average home, office or collegiate dictionary. For example: such trade names as dacron and orlon; such trade terms as bird nesting, fish eyes, kitten's ear, Q-factor, layboy. Thousands of commonly used trade abbreviations such as C.W.O., MUF., VI, F.i.b., Gbo., P.D. and legal terms such as habendum are explained and defined.



Questions and ANSWERS

Conducted by JAY G. MITCHELL

IN THIS ISSUE Mr. Mitchell discusses — (A) Exhausted Dry Telephone Batteries; (B) Inadequate Trunking Equipment; (C) Relay Contact Spring Identification in Wiring Diagrams; and (D) Cable Characteristics and Desirability.

QUESTION:—*This telephone company is a small one serving a small town and a number of rural developments reached by multiparty rural lines. All of the equipment is magneto but the lines in the town are limited to not more than four parties for party line service and individual lines for the stores and offices. One of the heavy items in the upkeep of our service is the dry batteries that must be purchased and we have been told that discharged dry batteries can be recharged so that they will have renewed life after they have once been replaced. Will you comment on this and if this is possible inform us where the required equipment for the recharging operation can be obtained?*

ANSWER:—This is an old question and it seems to crop up just about once a year. The answer, of course, is that discharged dry batteries cannot be satisfactorily and economically recharged. A theory can be developed indicating that this is possible but, from the practical and economic standpoint, this is not possible. It appears to be advisable, however, for telephone companies operating a large proportion of rural multi-party stations to install fresh new dry batteries in the late fall of the year in the stations which are inaccessible in the winter and to use the partially exhausted dry batteries so displaced for *renewals as needed* in the telephones which are in town and therefore easily accessible during the winter.

QUESTION:—*We have been very much interested in the short discussions of traffic problems recently. The question of adequate trunking appears to enter into the poor service that some of our subscribers complain about. Our equipment has been in service for some years and recent complaints of delays in reaching an operator indicated that the number of trunks in several groups is inadequate. The traffic in some other groups, being more business calls than residence, does not cause any complaints. What can we do to correct this condition without increasing the equipment in our exchange?*

ANSWER:—While this inquiry does not state what type of Central Office Equipment this company has in operation the inquiry can be answered without that information. This is a case, apparently, in which a redistribution of the subscribers circuits is necessary. This may involve some number changes but regardless of that possibility the lines which are using the equipment for long "Holding Time" must be taken out of the groups in which they are now located and connected into the groups in which many of the calls handled are of the sort which involves a shorter "Holding Time."

Such a shift of the heavy lines will, of course reduce the "Busy Hour Load" in the groups which appear to have traffic loads too great for the trunks to which such groups have access. It is to be noted, of course, that even if some heavily loaded circuits are transferred additional trunks may still be necessary to carry the busy hour load of traffic.

The first step for this company to take is to make a traffic study by groups of subscribers lines and when this has been done the basis for making the required decisions will be available.

QUESTION:—*How are the contact springs of relays identified in wiring diagrams? We can trace out the circuits in the schematics but sometimes have considerable difficulty in looking for some trouble causing conditions by using the wiring diagrams.*

ANSWER:—This inquiry is difficult to answer because, so far as we know, there is quite a possibility that the practice, as to this detail, may not be the same in the circuit records of different manufacturers. However the following rule, which has been used in many cases in dial equipment when many of the relays are mounted on their side, that is with the armature of the relay moving from one position to another in the *horizontal plane*, the contact springs are mounted in two groups. One group, in such cases, will be mounted at the upper corner of the relay frame and one group at the lower corner. In such cases the number one springs are the ones nearest the main part of the relay, those at the top being numbered as T-1, T-2, and so forth. The springs in the lower group likewise are numbered B-1, B-2, and so forth.

In the case of relays having the armature moving from down to up, the springs in the right hand pile up are numbered R-1, R-2, and so forth while those on the other side of the relay are numbered L-1, L-2, and so forth. In this scheme T indicates the top, B indicates the bottom, R indicates the right hand and L indicates the left hand. The indications are to be interpreted as though the observer were looking at the terminal end of the relay where the

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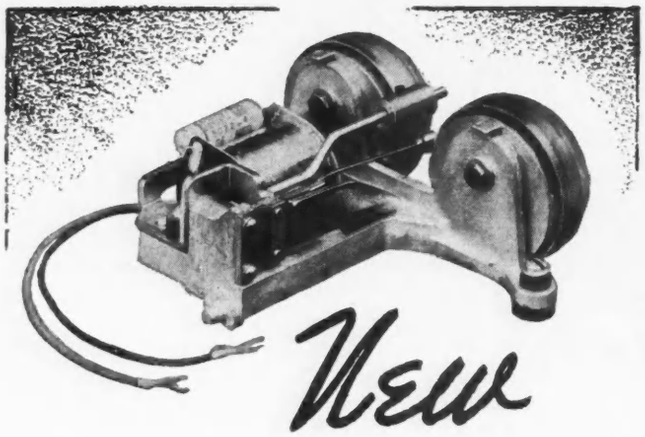

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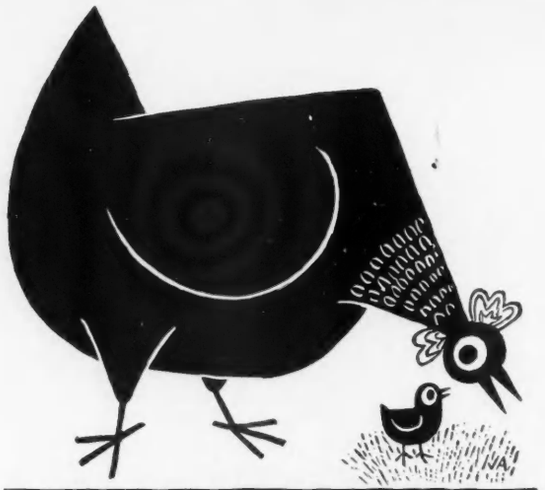

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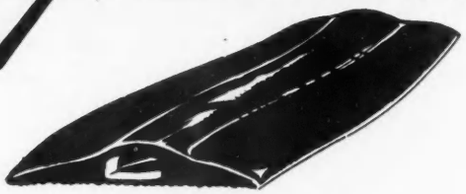

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wiring is soldered to the terminal clips. This scheme may not be applicable, as stated above, to the equipment of all manufacturers but will be helpful nevertheless in tracing wiring diagrams.

QUESTION:—*In making up our plans for the improvement of our service it has been decided to place considerable of the present open wire circuits in cable. In doing this we are trying to plan the work so that the transmission on some of our longer lines will not be inferior to the present. In considering this construction the cost of cable is, of course, one of the largest items. Quotations have been received on cable that are very puzzling because cable of the same gauge wire and including the same number of pairs is quoted at widely different prices. Can you outline briefly the basis on which we can make our own comparison of these quotations?*

ANSWER:—This inquiry cannot be answered definitely. There are certain considerations that this small company must employ in making comparisons between the bids for their cable requirements.

In the first place the average capacitance of a cable pair is all important. This is because two cables having the same gauge conductors and the same number of pairs may be described, as to their average capacitance, on two bases. These two bases, and they are all important in this connection, are the *grounded capacitance* and the *mutual capacitance*. The mutual capacitance is the average capacitance per unit of cable length between the two conductors on one pair. Obviously this is the capacitance value which directly and unavoidably affects telephonic transmission. The other is the *grounded capacitance* which is the average capacitance per unit of cable length between *one wire* of a pair and all the other wires in the cable connected to ground.

For a given cable the grounded capacitance is aprpoximately 1.6 times the mutual capacitance and, in order to avoid disappointment, it is thought that the specifications under which telephone cable is purchased should specify the average *mutual capacitance* per unit of length between the two conductors of the

(Please Turn To Page 100)

men with an eye to ECONOMY buy . . .

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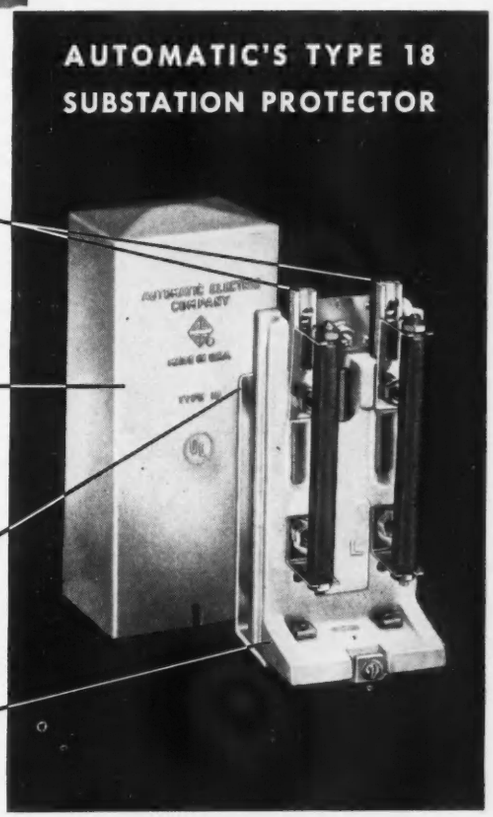

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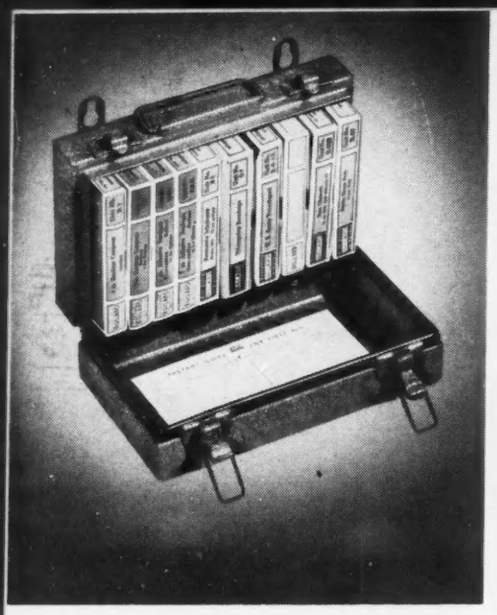

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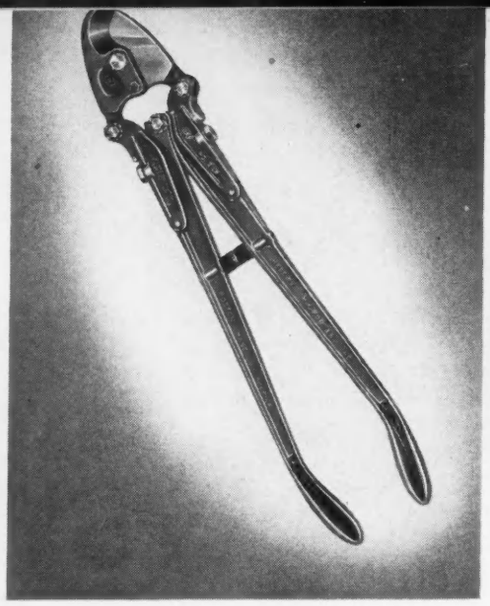

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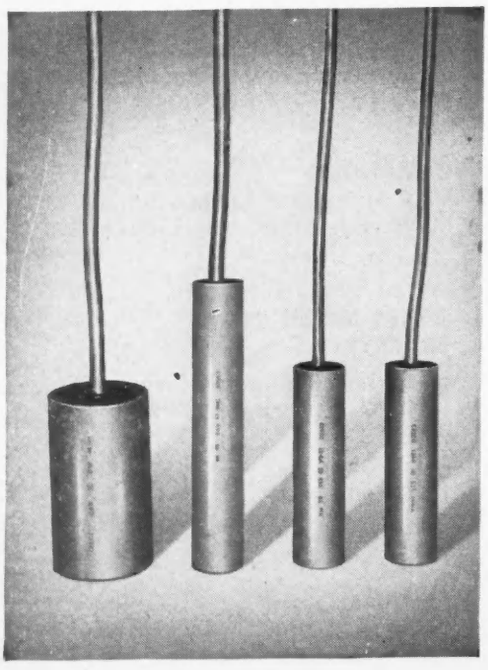

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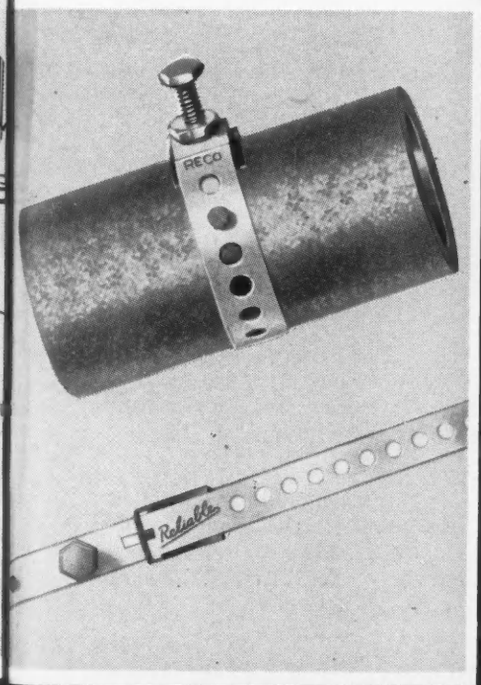
Reliable Station Ground Clamps are prepared for telephone, radio, and signal circuit station grounds employing pipes with ⅜" to ¼" diameters. Made by RELIABLE ELECTRIC CO., of tinned copper strips with rounded edges.



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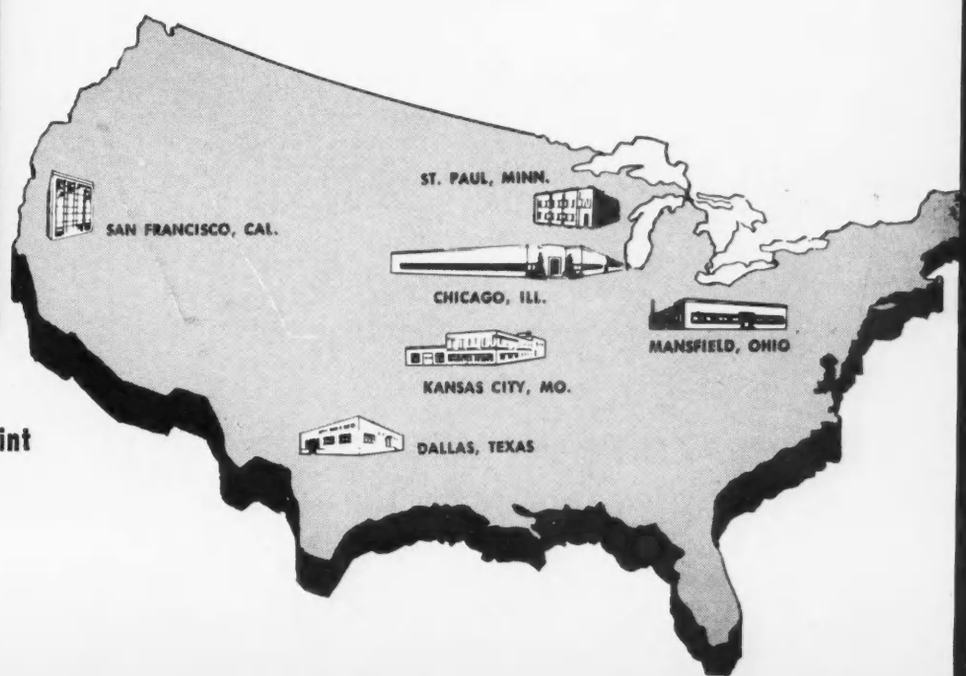

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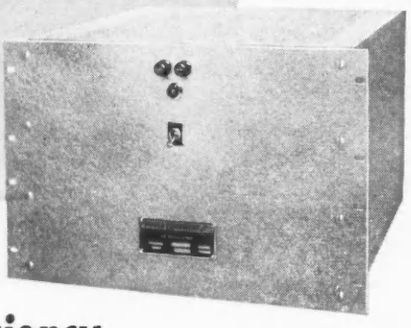

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same pair. This is for non-loaded cables for local exchange lines.

In aerial cable the cost of installation is an important consideration and may easily call for one of the proper capacity cables of the plastic type. These cables, if carefully selected for their transmission effectiveness, can be installed in most all local telephone systems without any unfavorable effects on the service and with some saving in overall cost.

It is advised that in the case of this company the most careful study of the project be made and that expert help be employed before the final orders for the material needed are placed. The replacement of open wire lines with cable should improve the service and reduce the cost of maintenance per line mile. The matter is not simple, however, and the information does not supply sufficient data for the making of a more specific recommendation. If additional data on cable is desired please write in again and supply the details of the proposed project.—THE END.

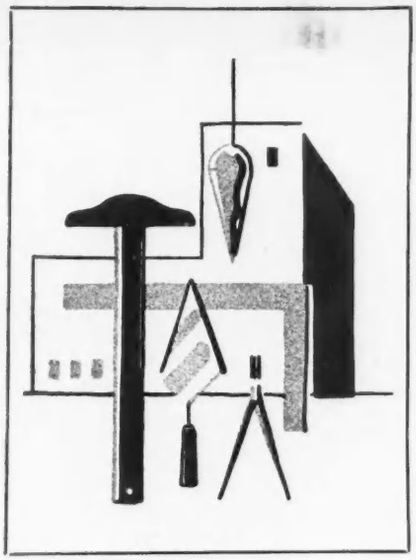
Washington Bureau

(Continued From Page 30)

rier routes. Because of the distance of these communities from such program service points, the monthly common carrier mileage charges for the television transmission facilities which are required to connect the stations to the established networks may not be commensurate with the economic prospects of these stations for profitable operation.

"This situation may deter and hinder the development of a nationwide television service. Furthermore, the construction of facilities for interconnection by the common carriers in such instances represents a substantial investment, and in some instances the greater portion of such investment may be unrecoverable upon the financial failure of such television stations."

There are similar issues building up in other fields, and the Commission is faced with deciding a fundamental regulatory question, either on a case-by-case basis or by laying down some ground rules which will apply generally to these situations. In either event, it will need the balance mentioned earlier.—THE END.



A monthly report on -

New Equipment and New Methods

NEW STRAND cable terminals . . . Multi-frequency ringers . . . Right-angle drives for electric drills . . . New line of portable electric plants and blowers . . . Self-sticking markers for various applications.

New Strand Cable Terminals Now Available

RELIABLE ELECTRIC CO., Chicago, is producing a line of cable terminals in 11-pair, 16-pair, and 26-pair sizes, for strand, pole and wall mounting employing reinforced cast resin binding post terminal blocks with lead sheathed paper insulated and plastic sheathed plastic insulated cable stubs, suitable for use in cable systems maintained under gas pressure.

The 11 pair and 16 pair terminals are designed primarily for attaching to strand supported cable, affording plant flexibility and minimum chance of damage. *Figures* 1 *and* 2 illustrate open and closed views of a Reliable strand mounted terminal. Where it is impractical to mount them on the strand, they can be placed in a vertical or horizontal position on poles or walls by using a detachable mounting bracket.

A 26 pair terminal is designed for mounting vertically on poles or walls. A detachable mounting bracket is furnished standard with all 26 pair terminals.

The cast aluminum alloy housings of the 11 and 16 pair terminals are equipped with stub cable entrance holes at opposite ends to facilitate the reversal of stubs where desired. The entrance hole occupied by the stub is sealed with a ring grommet and the unoccupied entrance hole by a solid grommet.

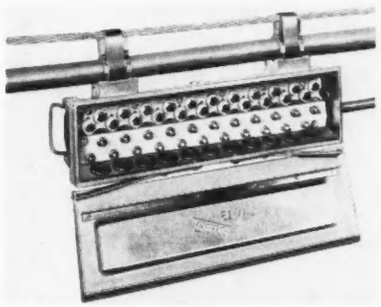


FIGURE TWO: — Reliable Electric strand cable terminal with cover turned down to expose terminal posts and protector units. Note split grommets at drop wire entrance holes and new type protector units.

The opening in both ends of the unprotected 11 and 16 pair terminal housing affords a practical means of connecting a plastic and lead cable together where direct splicing is not desired.

The cable sheath and the terminal housing are bonded through the binding post block so that the sheath and housing are at the same potential. The cable shield and the terminal housing are bonded together where plastic stubs are furnished.

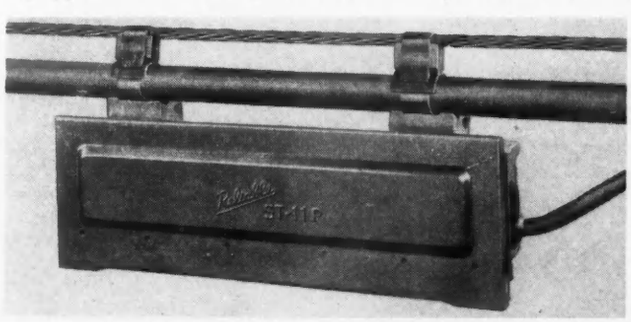


FIGURE ONE: — Reliable Electric 11-pair protected type strand cable terminal. View showing terminal with cover closed.

The binding post blocks with cable stub can be furnished separately for use in inside terminal boxes. A protected binding post block, ground strip and No. 504 protector units can be furnished for inside building installation where fuseless station protection is desired.

The overall dimension of the ST-11 housing is 5″ x 13½″ x 2¾″ and the ST-16 housing is 5″ x 18-¾″ x 2-¾″.

An illustrated handbook size specification is available on request from Reliable Electric Co., covering suggested procedures for the use of these cable terminals.

Multi-frequency Ringers

THE UNITED States Instrument Corp., Summit, N. J., are manufacturers of multifrequency ringers of a new design intended for use in W.E. 591 Type telephone sets. These ringers (*Figure* 3) are completely self-contained units adjusted to ring at the frequency stamped on the pole-piece. The resonant weight is correctly located and the position of the gongs is set at the factory for best performance.

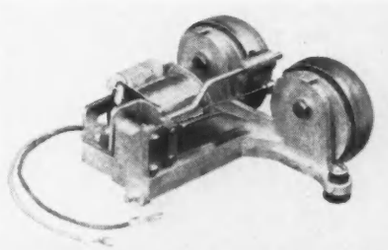


FIGURE 3. — The United State Corp. multi-frequency ringers have a resonant weight which operates a separate clapper only when the proper ringing frequency is applied to the line.

Two models of multifrequency

ringers are available, the GB600 and GB700 series. The GB700 series ringers are similar to the GB600 series, but have a sound output control. This self-contained assembly is fastened to the ringer base by a single screw. Contact of each damper arm against the gong is determined by the position of the lever which extends through a slot in the base of the set. This is a mechanical operation which depends on the spring tension of the damper arms to decrease the vibration of the gongs and has no other effect on the operation of the ringer.

Right Angle Drives for Electric Drills

THE MILLERS FALLS CO., Greenfield, Mass., manufacturers of electric drills, produces a right angle drive that fits any 1/4-inch electric drill with a spindle threaded 3/8"—24 internally or externally.

The right angle drive, illustrated in *Figure* 4, is considered ideal for telephone station and central office installers who often find a need to drill holes through joists or wall studs where a direct drive drill cannot be used.

They fit directly on to the spindles specified above without requiring an adapter of any kind and may be used at any desired angle. The gear ratio is one to one. The gears, running in a sealed grease chamber, are precision cut from solid steel blanks. The spindles run in long "Oilite" self lubricating bronze bearings. The reversible (right or left hand) handle supplied is mohogany finished hardwood.

For use with high speed drills, the special steel bits illustrated in *Figure* 5 will bore through wood studs or

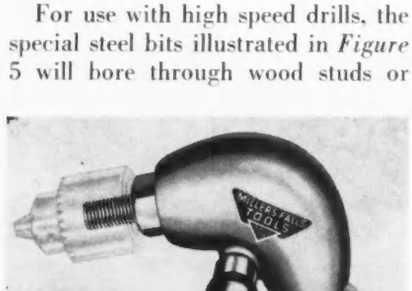


FIGURE FOUR: — The Miller-Falls right angle drive converts any 1/4-inch electric drill for drilling holes in close quarters.

FIGURE FIVE: — This set of Miller-Falls high-speed drill bits will make short work of boring holes even in hard wood.

joists with surprising ease and rapidity.

The blade is made of fine high speed steel which holds its edges ten times longer than ordinary tool steel. Drilling heat that would draw the temper of ordinary tool steel bits is said to have no effect on the bits. It cuts fast and clean, even at angles, in hard and soft woods, plastics, plywood and similar materials. It is easily resharpened on a grinding wheel. Wire nails or screws encountered in boring through floors or partitions can be cut wtihout damage.

Portable Electric Plant Engine Operated Blower

THE UNITED STATES MOTORS CORP., Oshkosh, Wisconsin, manufacturers of electric light plants, of-

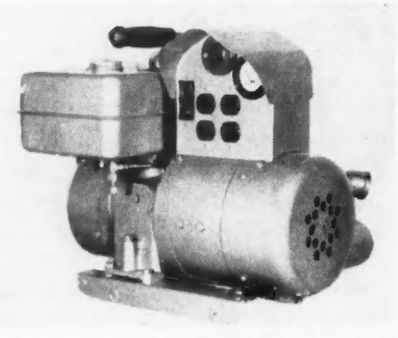


FIGURE SIX: — The United States Motors Corporation 800 to 1200 watt DC portable electric plant is desgined to provide power for infra-red heat lamps, flood lights, and electric equipment at manhole locations.

fers a line of electric plants and ventilating blowers designed to increase work comfort in manholes by heating and ventilating them, as well as provide light and power for work operations.

Please Turn To Page 104

Construction
and
WITH THE DOUBLE
STROMBERG-CARLSON
LEADING

for longer battery life and service...

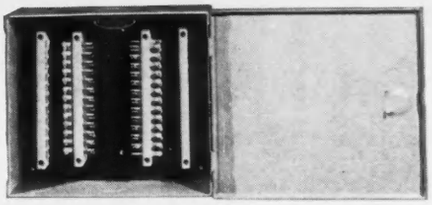
the new
RAYTHEON
"high-rate" RectiChargeR!*

This constant potential battery charger like all Raytheon RectiChargeRs, is completely automatic. It has special dry disc rectifiers plus an exclusive Raytheon Magnetic Amplifier Control Circuit which maintains precise DC voltage output at any load in the presence of wide changes in AC input voltage . . . increases battery life by eliminating over and under charging.

It handles inexpensively all normal power requirements and allows the battery to "stand by" fully charged to meet all emergency demands. You get noiseless current at constant voltage by simple connections to a power outlet and your battery. It is ideally suited for use with systems requiring power for 22/24 cells of battery.

*Reg. U. S. Pat. Off.

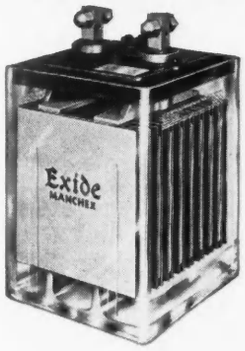
...tion materials
...nd Supplies
...UBLE GUARANTEE OF
...LSON AND AMERICA'S
...ADING MANUFACTURERS



cook type "57" interior terminal box

The type 57 interior terminal box is for distribution and termination of lead-covered or loom cable for low-voltage circuits. The box itself which has an Underwriters' Laboratory listing is constructed of smoothly enameled steel, with hinged cover and necessary knock-outs. Fanning strips and terminal strips are provided as well as screw connectors on the drop sides and solder clips for cable wires.

Exide-Manchex telephone batteries



assure positive operation

For Central Office and Private Branch Exchange Equipment

This is proven daily in exchanges of every size . . . for over 60 years Exide Batteries have been serving the Telephone Industry . . . the Manchester positive plate with its exclusive button type construction provides exceptionally long life . . . latest developments on molded glass jars permit compact space saving installation . . . heavy terminal posts with copper inserts provide extra conductivity for sustained voltage at high discharge rates . . . microporous rubber along with slotted plastic separators, are impervious to chemical and electrical reactions . . . plastic spacers assure plate alignment . . . for assured dependability, long life and low-cost maintenance use Exide Manchex.

The Electric Storage Battery Co.
Philadelphia, Pa.

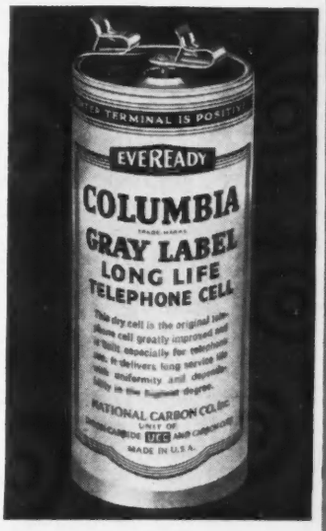
1888 . . . Dependable Batteries for 66 Years . . . 1954

long life telephone dry cells

"Eveready" "Columbia" "Gray Label"

Higher sustained voltage . . . longer life . . . rock-bottom economy—these qualities are assured through the constant supervision of America's largest dry battery laboratory.

Made by the makers of the famous "Eveready" "Air Cell" Operators' Transmitter Batteries.



THE QUALITY CELL PREFERRED BY TELEPHONE ENGINEERS

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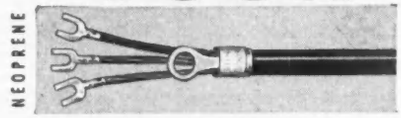
"Panoramic Vision" Television Receivers

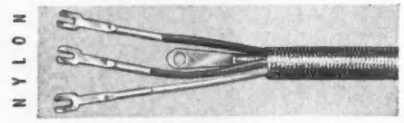
AND MANY OTHER ELECTRONIC PRODUCTS FOR OUR ARMED FORCES

CORDS BY Runzel

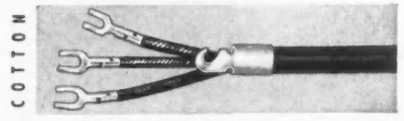
YOUR



BEST



BUY!



Are you familiar with the features of these fine cords?

NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

Our geographical location means QUICK SERVICE.

RUNZEL
Cord and Wire Co.
4723 W. MONTROSE AVE.
CHICAGO 41, ILL.

(Continued From Page 102)

The electric plant illustrated in *Figure* 6 is portable and provides 800 to 1200 watts at 115 volts dc, depending on the model and construction of the unit. It can be used to operate infra-red heat lamps to provide heat in the manhole. It will also provide power for lighting flood lights and operating soldering irons and electric tools within its capacity. AC models are also marketed.

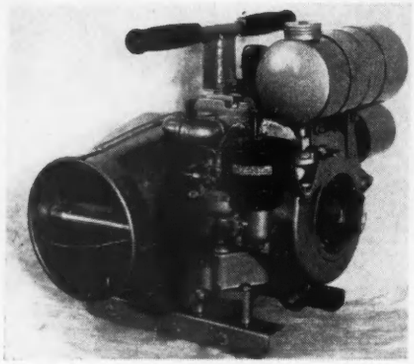


FIGURE 7: — The U.S. Motors Corp. gasoline engine ventilating blower will adequately ventilate manholes.

The manufacturer also offers infra-red heat lamps of 375 watts rating at 110-125 volts with 15 ft. extension cord, protective explosion screen, and mounting bracket for use with its equipment.

Figure 7 shows the portable gasoline engine ventilating blower designed for ventilating manholes. It is capable of providing 800 cubic feet per minute of air. It is operated by a standard 4-cycle, single cylinder, L-head, air-cooled engine, and has a squirrel cage type blower wheel in aluminum housing with wide-mesh air intake.

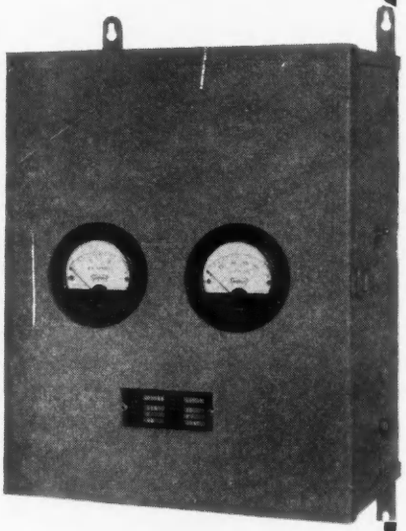
Self Sticking Markers for Various Applications

W. H. Brady Co., Milwaukee, Wis., is producing a line of self-sticking industrial products. These consist of pressure sensitive markers and labels in a wide variety of shapes and letterings made to the customer's specifications as well as standard stock items.

For storerooms, shops, and central offices, the Brady dotted line aisle markers are stated to solve costly aisle marking problems and provide safety advantages of dotted lines at a fraction of the cost of line paint-

Dependable Power

for Years- and Years- and Years- of Service!



Schauer

ELECTROX

BATTERY ELIMINATORS
BATTERY CHARGERS

In sizes and capacities to meet every telephone power requirement.

See your Schauer Jobber. Write for Bulletin 1465.

RECTIFIER DIVISION
SCHAUER
MANUFACTURING CORP.

4516 Alpine Ave. Cincinnati 36, Ohio

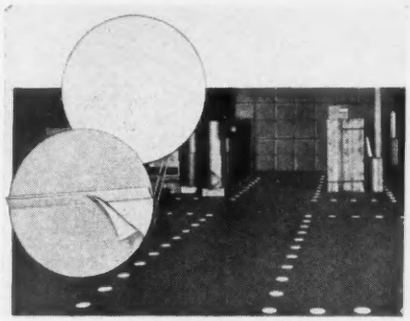


FIGURE NINE: — Brady Quik-Labels save in a permanent manner when Brady circular markers are used.

ing. *Figure* 9 illustrates a typical aisle layout using Brady markers.

Brady aisle markers stick without moistening to any clean, dry floor. The aisles can be marked any time and production is not interrupted as when painting lines. No clean up work is necessary.

The aisle markers are made of durable, colorful, vinyl plastic. Only .005″ thick, they lie flush with the floor and will not crack, shatter, or obstruct traffic. They are claimed to be resistant to abrasion and are unaffected by most common solvents, oils, grease, acids, salts and water. Each marker is mounted on a 2 piece folded paper liner which protects the heavy duty adhesive until the marker is used.

Four bright fadeproof colors are available: Caution Yellow, Fire Red, Safety Green, and Neutral White, in 2″, 3″, 4″ and 5″ diameter circles. Direction arrows are also available in all colors and sizes, and special sizes, colors and shapes are made to order.

Brady Quik-Labels are considered ideal for identifying conductors in electrical equipment. They are used in the manner shown in *Figure* 10.

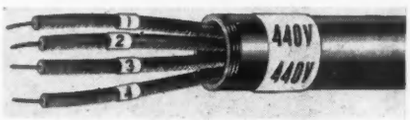


FIGURE TEN — Brady Quik-Labels save time and money in identifying conductors in electrical equipment.

This type of marker is stated to save expensive labor, insure accuracy in connections and assemblies.

These markers are made of durable cotton cloth material and have a silicone plastic coating to resist dirt, grease, grime, moisture, and abrasion. They stick without moistening, give permanent identification and will not interfere when wire is pulled through conduit.

The markers are pre-cut to size and come mounted on handy dispenser cards. A Patented starter-strip facilitates quick removal of any or all labels from the card. A dispenser is also available for production applications.

For marking pipes and electrical conduit, Brady pipe markers are available in standard ASA colors and designations. For identifying telephone cables in cable vaults and manholes, the manufacturer will provide labels to customer specifications.

First Aid

TWO MAJOR CHANGES in first aid care were announced recently by the American Red Cross and adopted by the Bell System. They deal with the application of tourniquets and injuries due to cold. Both represent radical departures from previous methods.

It is now recommended that a tourniquet should be applied close to

Please Turn to Page 108

OLIVER
Thimbleye Anchor Rods
give you
STRONGER guying

"Thimbleye" makes slack pulling easy; assures tight, sound guying. Proved by years of successful use with expanding, cone, and screw anchors. Write now for prices on Thimbleye Rods (½-¾″ diam., 5-9′ lengths), and our full stock of Oliver Pole Line Hardware.

Recommended and Sold Through Our Distributors

Buy Automatic's APPROVED Supplies
Highest Quality
Biggest Line
Fastest Service

AUTOMATIC ELECTRIC

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

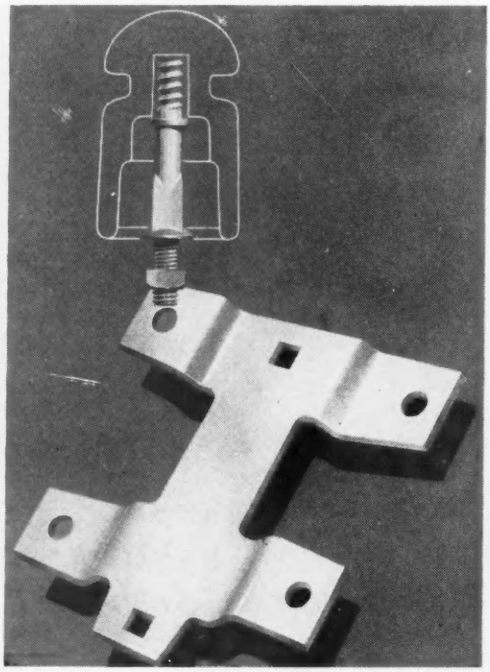
For Quick, Dependable Wire Splices—Bi-Seal, self-bonding, electrical insulating tape fuses into a solid, watertight, dielectric sheath when applied over wire and cable splices. Outstanding for low temperature applications. BISHOP MFG. CORPORATION.

Ontstanding Battery Performance is yours when you choose Gould Plante' Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free service! Made by GOULD-NATIONAL BATTERIES, INC., —they're the finest money can buy.

The Expanding Plant and Spreader Arms of Everstirk Anchors insure 100% safety and maximum holding power under excessive strain. Ribbed base plate allows anchor to be locked solidly on rod. Quickly installed. Made by EVERSTICK ANCHOR CO.

It's Safe...In All Kind of Weather — Copperweld's rugged strength resists heavy ice and wind loads. Copper, molten welded to steel, assures corrosion resistance and high conductivity. Provides economy in long-span construction. COPPERWELD STEEL CO.

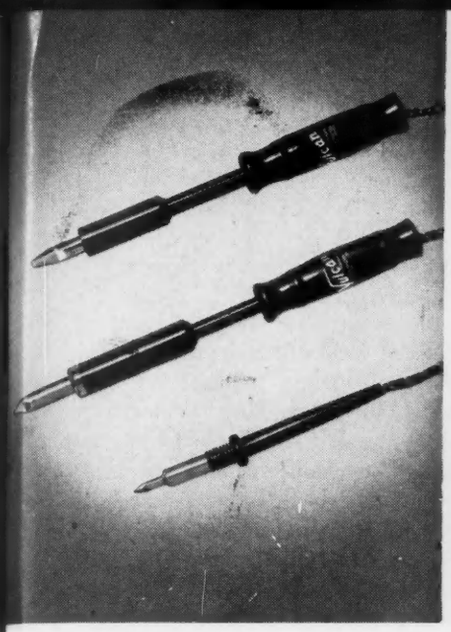
Standard in the Telephone Field for transposing wires at the Cross Arm. The No. J8286 "Point" Transposition Bracket is made of high carbon steel—will stand any stress. C-B Insulator Pin, also standard, now available for prompt delivery. JOSLYN.



KELLOGG DIVISION OF IT&T

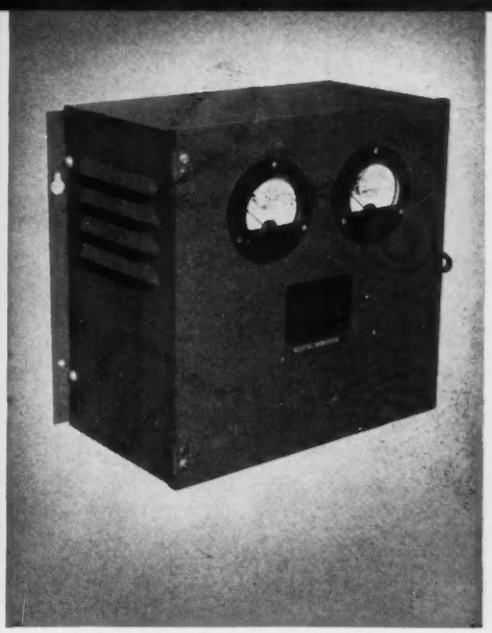
Send Your Next Order for Supplies To:

KELLOGG SWITCHBOARD AND SUPPLY COMPANY
Sales Offices: 79 W. Monroe St., Chicago 3, Ill.
A Division of International Telephone and Telegraph Corporation



ou'll Find Soldering is Easy... workmanship eater with famous Vulcan Soldering Irons. vailable in five sizes—either plug or trew tip. The high-powered heating ele- ent assures even proper heat and long ervice. VULCAN ELECTRIC COMPANY.

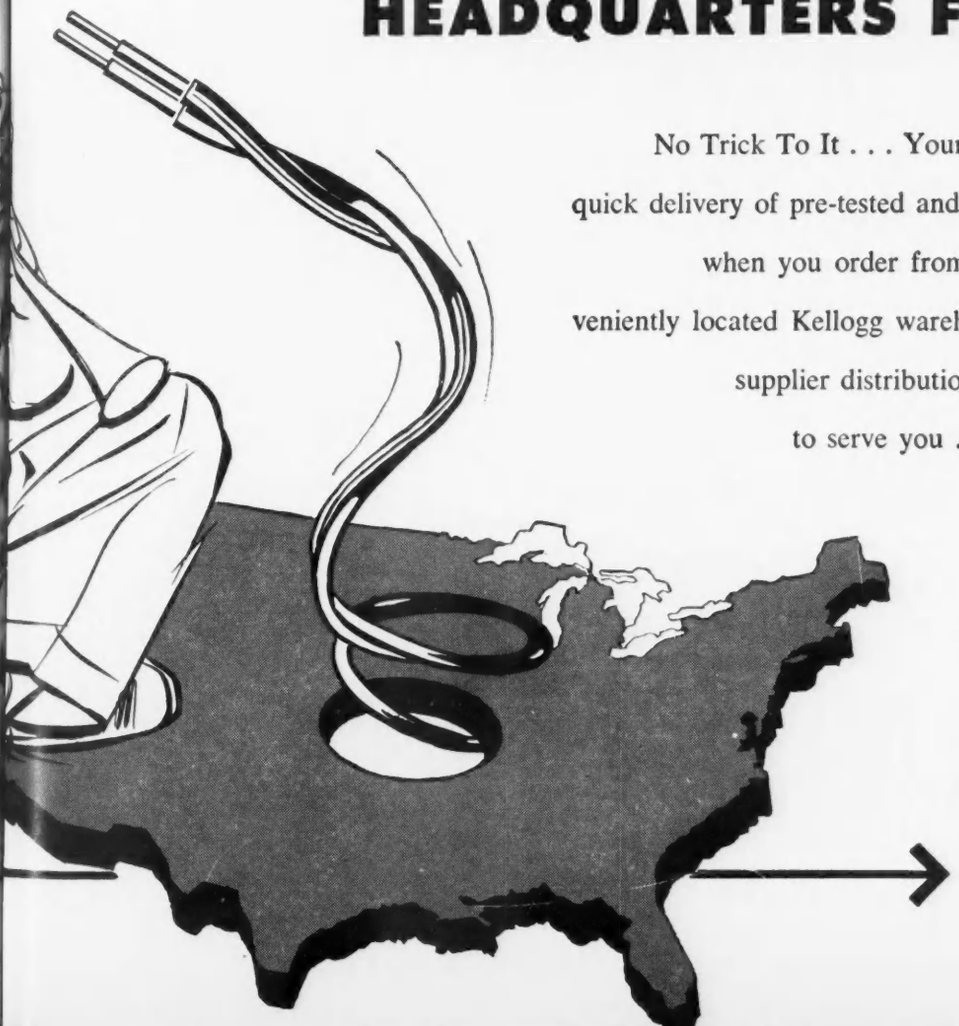
Sealed Against Trouble! Communication equipment manufacturers demand Kester Plastic Rosin-Core Solder, because it makes a perfect seal. Prevents high-resistance joints and intermittent open-and-close circuits. KESTER SOLDER COMPANY.



First Choice of the Telephone Industry! The Raytheon RectiChargeR is fully automatic, maintains constant output voltage regardless of variation of load and line voltage. Never overcharged or undercharged, batteries last longer. RAYTHEON MFG. CO.

KELLOGG

HEADQUARTERS FOR SUPPLIES



No Trick To It . . . Your order gets instant action . . . brings quick delivery of pre-tested and guaranteed Line Supplies when you order from Kellogg. Six well-stocked, conveniently located Kellogg warehouses and more than 100 supplier distribution depots are ready to serve you . . . today.

KELLOGG BRANCH WAREHOUSES AND OFFICES:

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Chicago 38, Illinois
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1663 Mission Street
San Francisco 3, California
Market 1-6011

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Nestor 5878

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KELLOGG BRANCH OFFICES:

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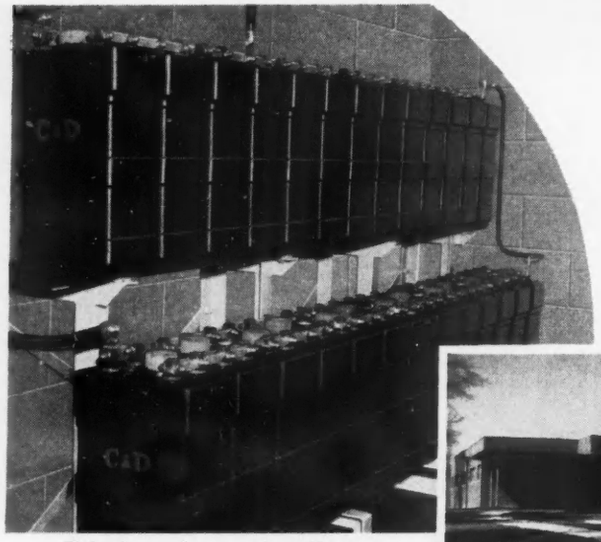
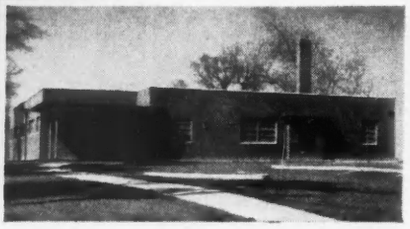
Atwater 8559

157 Chambers Street
New York 7, New York
BEekman 3-8505



At The Chester Telephone Company



Telephone battery installation at the Chester Telephone Company, Chester, S. C. The 26 PlastiCal cells, Type RCT-840, have a 840 A.H. capacity.

It's C&D Batteries for EXTRA life

At the Chester Telephone Company, Chester, S.C., continuous, dependable service starts in the battery room—with C&D Batteries. For Chester Telephone, now serving 5000 subscribers in historic Chester county has found that C&D has the answer to telephone battery needs.

When you order your next telephone battery, specify C&D. For with C&D you get:

1. Easier maintenance, because patented Post Seal eliminates acid creepage.
2. Greater safety, due to C&D's exclusive Saftee-Vent which greatly reduces chances of explosion.
3. Elimination of sudden leaks due to internal stresses.

You can order C&D batteries from your equipment supplier.

WRITE FOR BULLETINS!

For details and specifications on C&D telephone batteries, write for Bulletins T-527 and T-528.

C&D

BATTERIES, INC.

of Conshohocken, Pa.

Manufacturers of Industrial Batteries since 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

(Continued From Page 105)

the wound, with unbroken skin between it and the wound. Once the tourniquet has been applied, it should not be released, no matter how long it has been in place, except by a physician. Previously, first-aiders were advised to apply the tourniquet high on the arm or thigh and to loosen it every fifteen minutes. The tourniquet should be used only for severe life-threatening hemorrhage which cannot be controlled by other means. Crushing wounds or large lacerations where large arteries are severed, or partial or complete severance of a body part are the only instances where application of tourniquets may be justified.

In the other major change, rapid warming, is now advised for victims of frostbite or for persons who have suffered prolonged exposure to cold. Previously, firstaiders were advised to thaw out a frozen part gradually in cool water or in a cool room. Now they are told to bring a victim into a warm room quickly and rewarm him as rapidly as possible by placing him in a tub of warm, not hot, water, or by wrapping him in warm blankets.

Changes in use of the tourniquet are the result of research based on experience gained in World War II and the Korean action. The new techniques for frostbite and over-exposure to cold derive from the knowledge gained by arctic explorers and military personnel stationed in the far north.

L. J. Denney Buys Amherst (Va.) Tel. Co.

L. JOHN DENNEY took over ownership and management of the Amherst (Va.) Telephone Co. on Sept. 1. Mr. Denney has had 25 years of general telephone operating experience with the International Telephone & Telegraph Corp.

In announcing his purchase of the Amherst company, Mr. Denney said the firm has 710 stations, all dial except a 160-station PBX at Sweet Briar College. He plans to establish a 3-year construction program to provide service to several small communities which are without service.

General of Wisconsin Converts Two Exchanges

THE GENERAL Tel. Co. of Wisconsin recently completed conversion of its

Kingston and Dalton telephone exchanges from magneto to dial operation, according to an announcement by company President, T. H. Moran.

In bringing improved telephone service to the two communities, the General Telephone Company spent nearly $54,100.

Upon completion of the third and fourth such dial conversions of this year, 51 of the General's 145 Wisconsin telephone exchanges are now dial operated. These 51 exchanges serve 42,711 telephones.

Helpful Data In New Bulletins

THE STROMBERG-CARLSON CO., Rochester 3, N. Y., recently announced publication of the following technical bulletins:

(1) "A Description of the 2-6 and 2-10 Convenience Systems."

(2) "Operation and Use of the No. 1573 2-Line Telephone." (Engineering Bulletin T-120.)

(3) "Operation and Maintenance of Stromberg-Carlson 6K System." (Engineering Bulletin T-129.)

(4) "Operator's Manual for Use with the Stromberg-Carlson No. 3 Toll Switchboard." (Engineering Bulletin T-131.)

(5) "Attendants Manual for Use with No. 121 Cordless P.B.X. Switchboard." (Engineering Bulletin T-134.)

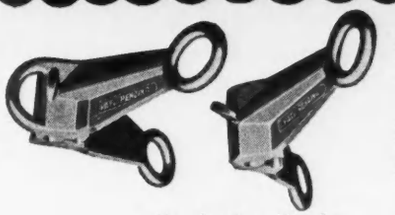
(6) "Number Assignment Procedure for Terminal per Line XY Dial Systems." (Engineering Bulletin T-138.)

(7) "Construction, Operation and Maintenance of the Tape Announcer." (Engineering Bulletin T-139.)

All of the above bulletins are offered free to Independent telephone industry members.

The Ansonia Wire & Cable Co. recently announced the appointment of WALTER G. PEARSON, Charlotte, N.C., as telephone cable sales manager. Formerly he was head of the Walter G. Pearson Co., Charlotte, N. C. Prior to forming his own company which represented the Ansonia company as manufacturer's agent, Mr. Pearson was with the Virginia Electric & Power Co. He served with the U. S. Navy from 1941 to 1946, attaining the rank of Lt. Commander. In 1946 he established his own business which has represented Ansonia and other manufacturers in the Southern states for the past eight years. Ansonia representatives state the appointment of Mr. Pearson is in line with its new policy providing that Ankoseal telephone cable will be sold to Independent telephone companies through recognized telephone distributors.

How to Solve Your Cable Spinning Problems the Easy Way



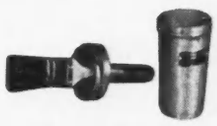
Platform Clamps
Support splicer's platform from aerial cable —spun or otherwise. Won't slide on grade or damage cable. Bronze alloy.

Handline Block,
specially designed for spun cable, may be used on cable with any other kind of support. Clamps on strand. Won't slip on grade or damage cable. No wrench is needed. Bronze alloy.

Single Eye Hooks
...for four supporting adjustable ropes of a splicer's platform. Cadmium-plated steel.

Double Eye Hooks
make splicer's platform readily adjustable ...by threading supporting ropes through double eye. Cadmium-plated steel.

Lashing Wire Clamp
designed by Neale, holds spinning wire with positive action clamp when terminating at pole. Also keeps slack from running back in cable repairs. Bronze alloy with cadmium plated screw.

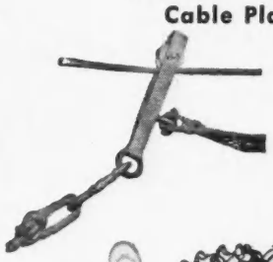


Soap Can & Brush
keeps pressure testing soap or paint in excellent condition. Cast aluminum for light weight. Tight-fitting cover serves as handle for brush. Container equipped with spring belt clip.

LITTLE GIANT Slack Pullers

Here's a combination of great strength and very simple operation...to make difficult operations easy. Furnished with either slip handle (left) or ratchet (right). Moving parts cadmium plated.

Cable Placing Ring Guide Roller
offers means of pulling cable in and takes down pull on tow line to truck. Cadmium plated steel with bronze bushing.



Cable Placing Shoe
is used ahead of spinner to raise cable from reel to strand in placing and spinning cable. Also used stationary at pole when placing with rings.

Steel Placing Rings
...for light cable. Slip rings onto cable at pole and attach to pulling line. Rings distribute themselves every five feet along span. Sets of 20, including 110 feet of rope attached.

Bronze Cable Placing Ring.
Roller design eliminates sheath damage of all sizes of cable. Cast bronze body and bronze rollers.

CABLE SPINNING MANUAL
gives complete details on operation of Neale Cable Spinner with easy-to-follow service and maintenance instructions.

CABLE SPINNING
Equipment Company PHONE 2-7234
3100 TOPEKA AVE. TOPEKA, KANSAS

Fold up your derrick from inside the cab!

with the

TEL-E-LECT STORAGE KIT

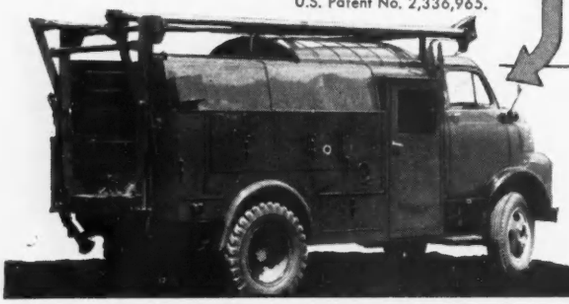
The patented Storage Kit fits any standard utility truck body and "A" frame derrick and it can be quickly bolted on the back of your truck by your local mechanic. The derrick will go up or down in a minute or less, entirely controlled by the man in the truck cab. Working with a double drum winch, you get live boom operation—or easily adjustable derrick elevation with a single drum winch. The cost is only a fraction of other, more intricate derrick storing systems—and there's no rebuilding of your present equipment! *Write for details.*

Earth Boring Equipment for All Types of Trucks

TEL-E-LECT *PRODUCTS, INC.*

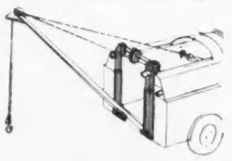
10,001 Minnetonka Blvd., Minneapolis 16, Minn.

U.S. Patent No. 2,336,965.



Derrick raised by simply engaging the winch.

Vertical position—winch rotation reversed.



Derrick is locked in operating position.

NATCO

CLAY CONDUIT

The proved and standard protection for Underground Telephone Cables. Highest quality and full line of shapes.

NATCO CORPORATION

formerly National Fireproofing Corp.

327 Fifth Avenue, Pittsburgh 22, Pa.

How to write a clear, logical technical paper

Step by step this authoritative book tells you how to select the type of report you should use, how to choose the most suitable forms and style, how to organize the material, and how to use figures, tables, and annotations—in short, make the report that is clear and understandable and wins acceptance for its ideas.

WRITING THE TECHNICAL REPORT

By J. Raleigh Nelson

University of Michigan
College of Engineering,
Professor Emeritus of English,
of those who will read and use it.
Third Edition, 356 pages, 5½ x 8½, 238 illustrations, $4.50

This practical guidebook takes up scores of specific points in the design and composition of the report and gives you exact directions for the setup of both long- and short-form reports, with numerous examples to guide you. In addition, the book outlines a system for the critical examination of the report to help you make sure it will meet the requirements

Telephone Engineer Publishing Corp.

7720 Sheridan Road Chicago 40, Illinois

C. J. Helmholtz Joins Onan & Sons

Hiram Hascall, general sales manager of D. W. Onan & Sons, Inc., Minneapolis, Minn., manufacturer of electric generating plants, has announced the appointment of Charles J. Helmholtz, Boston (West Medford), Mass., as direct factory sales engineer covering the New England States

C. J. HELMHOLTZ

Mr. Helmholtz, formerly manager of dealer sales division, Boston Branch, Fairbanks-Morse & Co., has been active in sales work throughout his entire career. He had been associated with Fairbanks-Morse Co., for over 34 years.

Headquarters for Mr. Helmholtz will be in West Medford, Mass., but he will spend the majority of his time working directly with Onan distributors and dealers in the field.

Andrew Bergeson Joins Stromberg-Carlson Co.

Andrew H. Bergeson, who recently retired from active duty in the U. S. Navy with the rank of Captain, has been retained by the Stromberg-Carlson Co., as a consulting engineer, according to an announcement made by Robert C. Tait, president.

Captain Bergeson graduated from the U. S. Naval Acamdemy in 1927 with a B. S. degree, and a commission of Ensign. Later he took post-graduate courses at Annapolis in radio, engineering and communications, and at the Harvard University Graduate School of Engineering, where he graduated in 1938 with an M. S. degree in radio engineering.

A. H. Bergeson

His most significant duties during his career with the Navy include: (1) Communication and Radio Officer, Staff of Commander Aircraft Scouting Force and Staff of Commander Aircraft, Atlantic Fleet (1939-1941); (2) head of Aviation Electronics Branch, Bureau of Ships, Navy Department, Washington, D. C. (1941-1944); (3) Commanding Officer of the U.S.S. Chourre which

operated in the West Pacific; (4) director Electronics Division, Bureau of Aeronautics, Navy Department, Washington, D. C. (1946-1949), and (5) Navy representative for Project Lincoln (1951-1954).

Gladwin Producing Reflective Signs

GLADWIN PLASTICS, INC., Atlanta, Ga., moving rapidly to expedite its recently announced expansion program, has established a new division for the production of advertising and traffic signs.

Occupying a building at 692 Ponce De Leon Avenue, N.E., in Atlanta, the new division has 8,000 square feet of space to utilize in the production of the signs.

Richard Linneman, founder and president of Gladwin, pointed out that the signs will be made on a mass

A NIGHT photograph taken by the light of the automobile headlights. This sign is readable from long distances.

production basis. He stressed, too, that materials and methods have been developed which enable the company to make the signs on an unusually low per-unit cost basis. The new Gladwin signs are made from a combination of polyester resins and Fiberglas. An entirely new process known as molded color separation is used.

In this process there is actual penetration of the color used for the copy or illustration below the surface of the background color. At the same time, the copy or illustration color and the background color are bonded together by cohesion.

The polyesters used may be made to meet certain specific requirements fitted to the particular end use of the sign. That is, it may be produced

RAYTHEON **RECTIFILTERS*** (BATTERY ELIMINATORS)

Raytheon RectiFilteRs are happier left alone. Except for a visit every twelve months or so for routine maintenance, they are content to go on providing D. C. output voltage year after year without attention.

That's an outstanding virtue in the Telephone Industry where trouble-free dependability is so vitally important.

Raytheon RectiFilteRs eliminate the need for storage batteries . . . automatically provide closely filtered and stabilized D. C. output voltage at low cost . . . release charging cable pairs for revenue producing service.

You'll like Raytheon RectiFilteRs because you never have to give them a thought — because they give you faithful service year after year at lowest cost.

RAYTHEON
MANUFACTURING COMPANY
EQUIPMENT SALES DIVISION
DEPT. 6120-TE, WALTHAM 54, MASSACHUSETTS

DISTRICT OFFICES: BOSTON, NEW YORK, CLEVELAND, CHICAGO, NEW ORLEANS, LOS ANGELES (WILMINGTON), SAN FRANCISCO, SEATTLE
INTERNATIONAL DIVISION: 19 RECTOR ST., NEW YORK CITY

RAYTHEON PRODUCTS INCLUDE: RectiChargeR* battery chargers; RectiFilteR* battery eliminators; Voltage stabilizers (regulators); Transformers; Tubes and other electronic equipment.

*Reg. U. S. Pat. Off.

Specify Raytheon RectiChargeRs and RectiFilteRs for completely dependable Telephone service. Your supplier offers a complete line for all requirements. Ask him for details or write direct.

Professional Services

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ENGINEER
Plant—Traffic—Commercial
Valuations and Original Cost
134 S. LaSalle St., Chicago 3

PENN LINE SERVICE
Scottdale, Pa.
Phone 765 or 686
CREWS
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Station Installers — Cable Splicing
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THE AMERICAN APPRAISAL COMPANY
INVESTIGATIONS • VALUATIONS
REPORTS
CHICAGO • MILWAUKEE • NEW YORK
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TOLL TICKETS
1-L OUT 40c per M
Minimum Quantity 20 M
TELEPHONE PRINTING OF ALL KINDS
CULLOM & GHERTNER CO.
600 21st Avenue N. Nashville, Tenn.

Construction Crews — Station Installers
Central Office Installations
Cable Splicers — Complete Engineering
HENKELS & McCOY
6100 N. 20th St., Philadelphia 38, Pa.
Now Operating in 18 States

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7720 SHERIDAN ROAD — CHICAGO
FOR MAIL BOX 523 EVANSTON, ILLINOIS

CARL C. CRANE, INC.
Consulting Engineers
2702 Monroe Street, Madison 5, Wis.
Experienced in REA Procedures
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HIGHWAY EARTH BORING MACHINES
MARMON-HARRINGTON All-Wheel-Drive
Ford Trucks
Line Bodies, Side Boxes, & Pole Trailers
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Pole Derricks & Winches
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P.O. Box 7008, Oklahoma City, Oklahoma
Telephone JAckson 8-2351

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Of poles, crossarms, and preservative treatments. Analyses of wood preservatives. Consulting and specification writing. Inspectors stationed throughout U. S. A.
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OVER 30 YEARS EXPERIENCE

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Engineering, Accounting, Valuations, Traffic Depreciation Studies, Rates and General Management Services
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TELE-WIRE SUPPLY CO., INC.
distributors of telephone wire
Cable—Cords—Supplies
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WHitehall 3-5865

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Consulting, Engineering, Installation,
Good Machinery, Competent Workmen
Pole Digging and Cable Splicing
Complete Contracting Service Available
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Box 267, Telephone 012, JEFFERSON, IOWA

TELEPHONE PRINTING
By People Who Know
the Telephone Business.
See the Suttle Catalog
SUTTLE EQUIPMENT CO.
LAWRENCEVILLE — ILLINOIS

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Consulting, Engineering, Installation,
Good Machinery, Competent Workmen
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What You Want
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ENGINEERING • CONSTRUCTION • MAINTENANCE
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CAN YOU HANDLE A FEW MORE ACCOUNTS
?

A Professional Card in Fortnightly Telephone & Engineer will be seen by the directing heads of thousands of telephone companies every month.

Rates are reasonable — Write for details. Address Advertising Manager, 7720 Sheridan Road, Chicago 26, Illinois.

AN ALL PLASTIC color separation molded sign is shown being removed from the molding press. Glass beads are locked into the letters during the molding process so they can't peel off. The result is a low cost long lasting reflectorized sign

with various qualities of hardness, toughness, rigidity, flexibility, freedom from heat distortion and light stability.

The net result is a sign panel which will not rust or corrode, will not dent or warp and which has exceptional strength. Since the color is impregnated throughout the plastic, it never needs repainting.

In addition to these unusual qualities of durability, the signs also are much lighter in weight than those made of metal. This helps reduce production costs and makes for easier handling and lower-cost shipping.

The plastic signs also are made with a special beading that makes them highly reflective for use in places where the message they carry needs to be picked up at night by automobile headlights. For example, the first of a line of molded reflective signs carrying the legend "TELEPHONE AHEAD" is clearly visible at night as far ahead as automobile headlight beams can reach.

This sign (24" x 39") is available by itself with an aluminum edging or as part of a kit. The Kit would contain the sign, two uprights and two cross pieces of angle iron which would make up a frame suitable for display on roadsides.

Stromberg-Carlson Announces Personnel Changes

JOHN W. TEGELAAR has been transferred from National Sales Engineering to Stromberg-Carlson Credit Corp. to fill the position of sales engineer vacated by the transfer of Howard E. Phelps to Rochester Telephone Sales, according to T. C. Thompson, sales manager of the Telephone Division.

Kenneth J. Terry of the Telephone Engineering Department will assume the duties of junior sales engineer under the guidance of R. O. Hoffman, chief sales engineer of National Sales Engineering Dept., Mr. Thompson also announced.

Another change in the Telephone Division is the transfer of Sherman B. Weiner of the National Sales Engineering Department to the SETCO Division of Stromberg-Carlson Co. located in Dallas, Texas. Mr. Weiner will become "Engineer in Charge" of that division.

Mr. Tegelaar was born in Delft, Holland, received his early education there, and came to this country in 1937. After additional study in Rochester universities he joined the Stromberg-Carlson Co. in 1941 where he worked on switchboard assembly. In 1947 he was transferred to Systems Engineering and in the spring of this year joined the National Sales Engineering group. During World War II he saw service with the U. S. Signal Corps where he served in Field Communications.

J. W. Tegelaar

Mr. Terry was born in Rochester and obtained his early schooling in Ontario, N. Y. He came to Stromberg-Carlson in 1942 after further training in Cornell University and Lynchburg College in Virginia. He worked in various departments in the Telephone Division, including inspection and installation, after which he assumed the duties of specification writer. His work at Stromberg was interrupted during 1943-46 when he was a member of the U. S. Air Force, serving as a lieutenant with the Troop Carrier Command. He lives in Ontario with his wife and two young daughters.

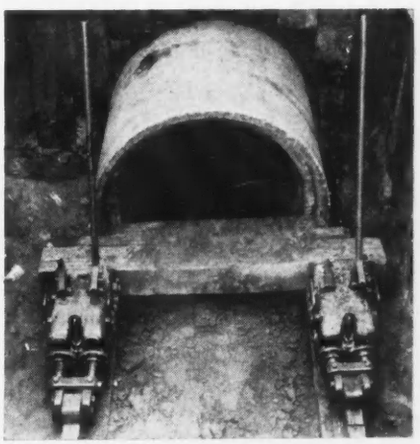
K. J. Terry

Mr. Weiner, a native Rochesterian, majored in electrical engineering at

FAST, EASY WAY
TO INSTALL PIPE...
AT LOWER COST

PUSH PIPE UNDERGROUND WITH A GREENLEE HYDRAULIC PUSHER

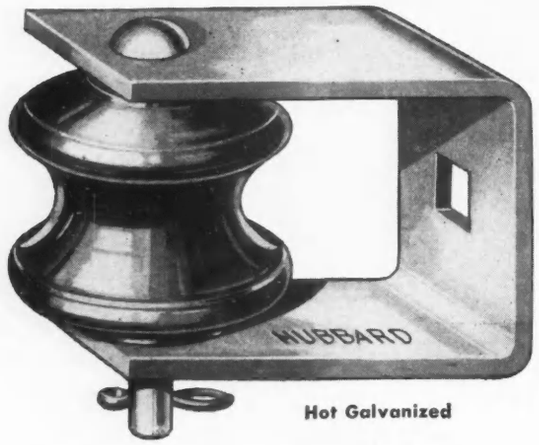
Here's the simple, cost-cutting way to install underground pipe. Speed your jobs with a GREENLEE Pusher. One-man-operated, portable, simple to operate. No tearing up of pavement . . . eliminates extensive ditching, tunneling, backfilling, tamping, repaving. Cuts job time to a fraction. GREENLEE Hydraulic Pipe Pusher often pays for itself on first job. Two sizes — model shown above for pushing 3/4" to 4" pipe. Larger unit, below, for pipe over 4", concrete sewer pipe and large drainage ducts. Power pump (as shown above) also available for extra ease and speed of operation.



TOOLS FOR CRAFTSMEN
GREENLEE

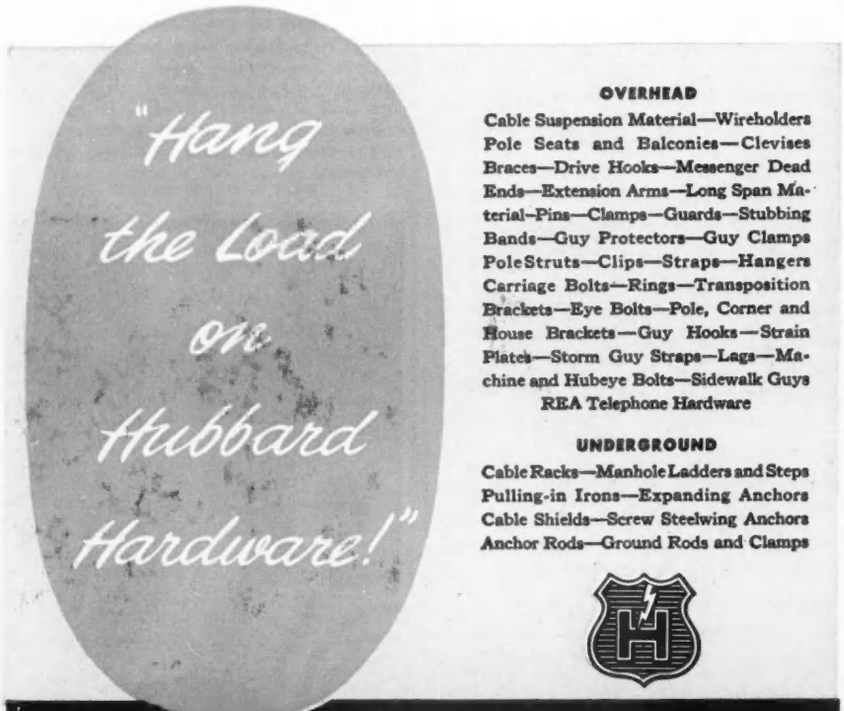
Write today for descriptive literature, Greenlee Tool Co., 2010 Columbia Avenue, Rockford, Illinois, U.S.A.

HUBBARD DEAD END TELEPHONE BRACKET



Hot Galvanized

The No. 2944 Dead End Telephone Bracket is universally used by the largest telephone companies for dead ending telephone circuits on crossarms. Brackets are made from 1½ by ⅛-inch flat steel and have a 13/32-inch square hole, to permit mounting either with a carriage bolt or crossarm bolt. No. 1663 Insulator, together with cotter bolt, is furnished with the bracket. It is wet process, brown glazed, 2 inches in diameter and 1⅝ inches high. The wire groove is formed to a 9/32-inch radius.


"Hang the Load on Hubbard Hardware!"
OVERHEAD
Cable Suspension Material—Wireholders
Pole Seats and Balconies—Clevises
Braces—Drive Hooks—Messenger Dead Ends—Extension Arms—Long Span Material—Pins—Clamps—Guards—Stubbing Bands—Guy Protectors—Guy Clamps
Pole Struts—Clips—Straps—Hangers
Carriage Bolts—Rings—Transposition Brackets—Eye Bolts—Pole, Corner and House Brackets—Guy Hooks—Strain Plates—Storm Guy Straps—Lags—Machine and Hubeye Bolts—Sidewalk Guys
REA Telephone Hardware
UNDERGROUND
Cable Racks—Manhole Ladders and Steps
Pulling-in Irons—Expanding Anchors
Cable Shields—Screw Steelwing Anchors
Anchor Rods—Ground Rods and Clamps
HUBBARD AND COMPANY
PITTSBURGH • CHICAGO • OAKLAND, CALIFORNIA

S. B. Weiner

the University of Michigan and joined the company in 1947. He started as an engineer in the Test Laboratory and later became an instructor in the XY School. Subsequent to this he joined the Installation Department as a service engineer and then transferred to the National Sales Engineering Department in the capacity of sales engineer. Prior to association with Stromberg-Carlson he was a member of the U. S. Army for four years. He will soon establish residence in the Dallas area.

Ralph W. Pouk Jr. Named to New Post

RALPH W. POUK, JR. has been appointed office and supply manager of the Chicago branch of the Stromberg-Carlson Telephone Division, as announced by T. C. Thompson, sales manager of the Telephone Division.

Mr. Pouk was born in Chicago and after receiving his early education in Fort Worth, Texas, returned to the Chicago area and completed his schooling, which included attendance at Northwestern University. He joined Stromberg-Carlson in 1946 in the capacity of stock record clerk, advancing to the positions of order editor and acting office and supply manager.

R. W. Pouk, Jr.

Before coming to Stromberg he was a member of the U. S. Air Force during which time he was stationed in England for two years. Previous business experience includes part time work with the City News Bureau of Chicago and Armour & Co.

General Cable to Make Aluminum Sheathed Cables

PLANS OF THE General Cable Corp. to provide industry in the United States with this country's first direct-extruded aluminum sheathed cables were announced recently by Irving T. Bennett, chairman of the board and chief executive officer, and J. R. MacDonald, president.

The two General Cable Corporation officials revealed they have completed arrangements for the purchase

from a leading West German firm of an aluminum sheathing press of a type which has been commercially successful in extruding aluminum sheathing directly onto an insulated cable core. Preparations are now proceeding for the installation of the press in one of General Cable Corp.'s plants in the Eastern United States.

"General Cable Corporation is proud to take the leadership in bringing to the communications and electric power industries in the United States the many proven advantages of cables sheathed with direct-extruded aluminum," Messrs. Bennett and MacDonald declared. "We believe this is a development of major importance for these and other industries.

"It has long been a policy of General Cable Corporation to check constantly on the progress of all research in its field and to bring its customers the newest proven methods. For more than 10 years, our technicians have been studying the steps being taken in various European countries to perfect the process of direct extrusion of aluminum sheathing on cables. Now General Cable will bring to American industry the benefits of the development of this highly specialized process.

"We plan to undertake development programs leading to the production of many new products in which aluminum will be employed not only for a protective covering but also will serve other uses."

They predicted also that the new aluminum sheathing process might make possible new designs of very high voltage overhead power cables, lighter communication cables for aerial installations, improved television (coaxial) cables, and quite possibly longer spans.

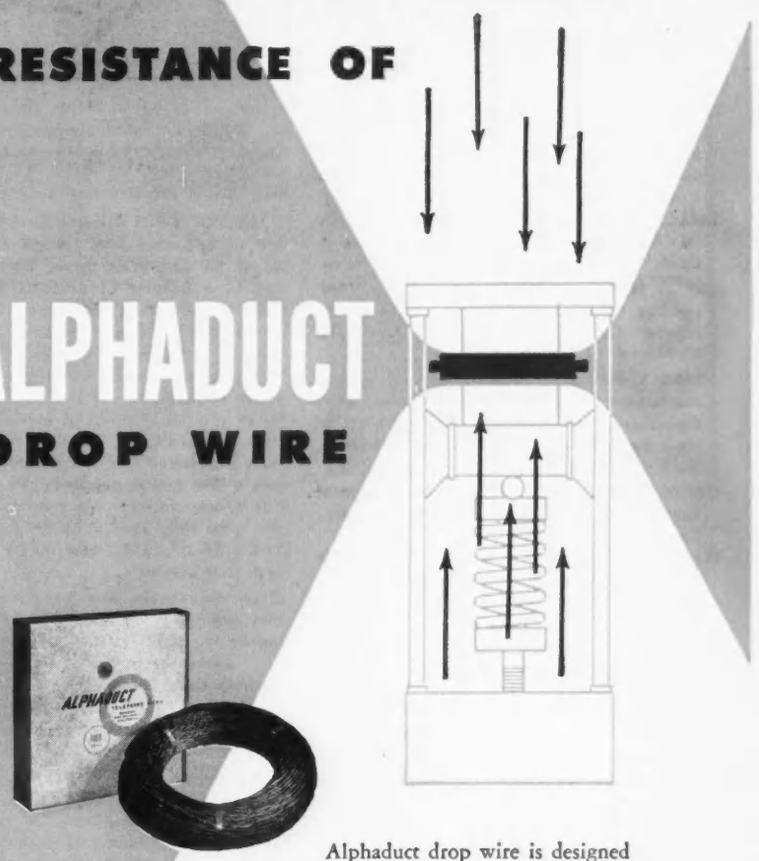
According to General Cable, "Wherever it has been used, aluminum-sheathed cable has given gratifying results." The successful use of several thousand miles of aluminum-sheathed cable in Europe has taken this type of cable out of the experimental stage and established it as a standard product. Also, several hundred miles of aluminum-sheathed cable have been used in the United States and Canada. These latter cables, mostly imported, have been made by the strip or draw down methods.

The first use in the United States of aluminum-sheathed cable occurred in 1932 when 8,000 feet of ½ inch

1500 pounds

MINIMUM COMPRESSION RESISTANCE OF

ALPHADUCT DROP WIRE



Alphaduct drop wire is designed and built to be the longest lasting drop wire you've ever installed. It's tested . . . completely, thoroughly and often to make sure that every single coil is up to Alphaduct's rigid standards.

Here's how the insulation is tested to make sure it won't crush.

Short lengths of Alphaduct are placed between the steel plates of a compression testing machine. These plates are then forced together at uniform speed until the insulation crushes. Alphaduct parallel drop wire has to withstand a minimum load of 1500 pounds before it breaks. Each conductor of Alphaduct twisted pair will withstand a 1000 pound pressure.

You don't have to worry about a little rough handling breaking down this kind of tested insulation. Try Alphaduct drop wire. It's dated, so you can see for yourself the extra wear it provides.

ALPHADUCT WIRE AND CABLE COMPANY • MILLTOWN, NEW JERSEY
NATIONAL DISTRIBUTORS • LEICH SALES CORPORATION, CHICAGO, ILLINOIS
REGIONAL DISTRIBUTORS • PANKEY SUPPLY CO., CHARLOTTESVILLE, VA.
THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

ADVERTISING, Directories — Planning, Selling, Compiling, Producing, Publishing and Distributing — backed up with over 43 years of Directory Experience and Knowledge. Write or call L. M. Berry & Co., Hulman Bldg., Dayton, Ohio.—[ADV. 1]

ADVERTISING, Directories — General Telephone Directory Co., 604 Pine Ave., Long Beach, Calif., and 1800 Busse Highway, Des Plaines, Ill.—[ADV. 2]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.—[ADV. 3]

BELTS — CLIMBERS — PLIERS — SAFETY STRAPS — CONSTRUCTION TOOLS. Klein & Sons, Mathias. 3200 Belmont Ave., Chicago 18, Ill.—[ADV. 4]

BOOTHS—Acoustic Telephone — Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.—[ADV. 5]

BRUSH & WEED KILLERS — Thompson manufactures many types of brush and weed killers. Write for helpful information on specific problems. Thompson Chemicals Corp., St. Louis 3, Mo.—[ADV. 6]

CABLE, All Plastic, Aerial, Duct, Direct Burial, FBX, Switchboard. — The Ansonia Wire & Cable Co., Ansonia, Conn.—[ADV. 7]

CLIP — Modern Lineman's Needle Clip. Free catalog #AA588 and free samples from: Mueller Electric Co., 1588AA E. 31st St., Cleveland 14, Ohio. [ADV. 8]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.—[ADV. 9]

CORDS, Switchboard & Telephone — Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.—[ADV. 10]

ELECTRIC HOT WATER HEATERS. Thermostatically controlled for any hot water heater, Vulcan Electric Co., Danvers 17, Mass.—[ADV. 11]

FURNACES — For quickly and economically melting lead and paraffin — Mutual Liquid Gas Equipment Co., Inc., 3600 W. Imperial Highway, Los Angeles, Calif.—[ADV. 12]

INSULATORS, Porcelain — Porcelain Products Inc., Box 300, Findlay, Ohio.—[ADV. 13]

LIGHTWEIGHT PULLERS — Coffing Hoist Company, 800 Walters St., Danville 5, Ill.—[ADV. 14]

PIPE PUSHERS — Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.—[ADV. 15]

POLE HOLE DIGGERS — For derrick mounted trucks. Tele-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.—[ADV. 16]

POLES, Southern Yellow Pine — Colfax Lumber & Creosoting Co., Inc., P. O. Box 23, Pineville, La.—[ADV. 17]

POLES, Southern Yellow Pine — Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.— [ADV. 18]

POLES, Southern Yellow Pine — Texas Creosoting Co., Orange, Texas.—[ADV. 19]

PROTECTIVE EQUIPMENT — Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.—[ADV. 20]

REBUILT TELEPHONE & SWITCHBOARDS — Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 2, Ill.—[ADV. 21]

TRUCK BODIES — Highway Trailer Co., Edgerton, Wisc.—[ADV. 22]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — Alphaduct Wire & Cable Co., Milltown, N. J.—[ADV. 23]

WIRE, Insulated Drop and Bronze or Copperweld — Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.—[ADV. 24]

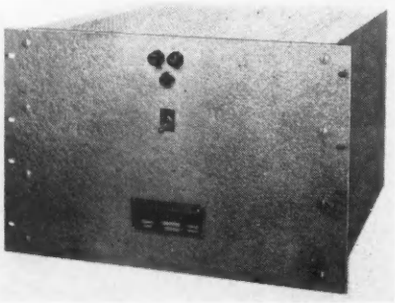
WIRE, Telephone, for all inside and outside uses — Whitney Blake Co., New Haven, Conn.—[ADV. 25]

NEW PRODUCTS' SHOWCASE

ELECTRIC DRILL BIT:—In introducing its new line of Speedbor "88" Wood Bits, the Irwin Auger Bit Co., Wilmington, Ohio, calls attention to a number of specially desirable features in these new spade-type bits for 1/4" electric drills and drill presses. Exclusive with Irwin is a hollow ground point which makes boring cleaner and faster and reduces the power required to use the bits in wood, plaster or plastics. Forged of special high carbon steel, hardened and tempered full length, each Irwin Speedbor "88" is brightly polished to give a fine tool appearance. Shanks are precision ground to eliminate wobble and the 3 flats are accurately spaced to fit 3-jaw chucks of 1/4", 5/16", 3/8" and 1/2" electric drills and drill presses.

Since the shanks are hardened full length, they are highly resistant to marring and chewing by the chuck jaws. Other Irwin SPEEDBOR "88" exclusives consist of stamping size marks on both sides of blade for easy selection, plus a hang-a-bit hole in center of the head, which permits users to conveniently hang bits on a wire nail or pin.

Irwin Speedbor "88" Electric Drill Bits are available in sizes 3/8", 1/2", 5/8", 3/4", 7/8" and 1". They may be purchased individually, or in four and six-bit Roll Kits. All sizes retail at 69c each. For complete information, Check New Product 662.



A-C LINE VOLTAGE REGULATOR:—The Power Equipment Co., (PECO), Detroit, Mich., recently introduced a new group of A-C Line Voltage Regulators.

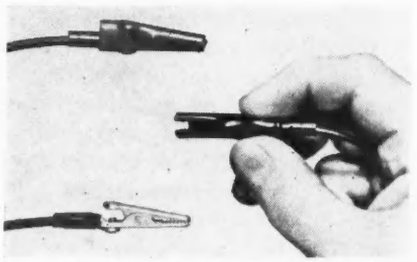
PECO designed and developed this new regulator for its own use, and after field-testing it thoroughly, now offers this new group of equipment as separate items in five popular ratings.

This new regulator is exceptionally small in size and weight, a fact accounted for by the extreme efficiency of the power circuit. The self-saturating circuit was designed for a very low output impedance which permits transient overloading without undue loss of regulation.

The control section is basically a magnetic amplifier with a cold cathode-type tube used as a voltage reference. In spite of this tube's dependability, conservative engineering dictates an alternate tube ever ready as a standby. Test switches permit routine checks of both tubes to make certain they are operable.

Safety factors are designed into the iron core components of this group of regulators, which provide trouble-free operation.

For Complete Data, Check New Product 663.



ALLIGATOR CLIPS:—A far cry from the modified lamb-feeding nipple which was Mueller Electric Co.'s very first clip insulator (Dec. 1910), is the specially formed skin-tight 2-piece insulator incorporated in Mueller's new Insulated Alligator Clip.

The steady parade of miniaturization and sub-miniaturization of electrical and electronic equipment has made fast test connections increasingly difficult, and the quick convenience of a test clip has often been lost.

The newly developed insulator, however, adds negligible size to its slim-nosed clip (15/64" O. D.) and covers it right down to the tip. A special lip-action slot in the flexing insulator allows the clip to "bite" the connection without "baring its teeth." Mueller claims that dozens of these clips can be closely compacted on crowded connections, in the tightest spots, and at all angles, with complete protection against shorts and shocks.

The manuafcturer states that radio and TV men, electrical and electronic engineering and test lab technicians will be the chief users of the new clip; however, full information will be sent to all interested persons. The Insulated Alligator Clip is available only as a unit, with factory-applied insulators.

The tough, thin insulating material is formed of a special plastic with high dielectric strength and will stretch and contract as the clip jaws are opened and closed. A tubular insulator covers the tail of the clip, while a tapered insulator covers the jaws. The two parts of the insulator overlap, for complete protection. The hidden metal barrel which is the tail of the clip, accommodates a banana plug, and also prevents bending of the bared wire when using the screw connection. The

screw connection is readily made by temporarily slipping one insulator forward.

Two Alligator clip types are available in the new completely insulated form. One is cadmium plated steel, the other is solid copper with a brass screw connection.

For complete descriptive matter and a free sample, write on company letterhead to Mueller Electric Co., 1584, TEM, E. 31st St., Cleveland 14, Ohio, or check New Product 664.

PORTABLE CYLINDER: The Insto-Gas Corporation, 1977, TEM, E. Woodbridge, Detroit, Mich., announces a new large capacity, portable cylinder — the "35."

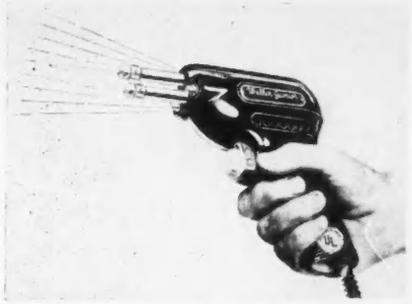
The "35" Cylinder was designed to meet a widespread demand for longer burning time for cylinder mounted Salamanders, Jumbo Furnaces and large torches.

The new "35" is a "natural" for operating two pieces of equipment at the same time. This arrangement represents a substantial saving to users where a dual hookup is necessary or practical.

The unique design of the new "35" provides a wide base with curled footring for maximum stability. Because the "35" is made of high tensile steel the tare weight is only 35 pounds, making a total weight when filled of 70 pounds — about 25% lighter than other large cylinders of similar capacity.

Insto-Gas now offers portable heat in three sizes, the New "35" pound, the 18-pound and the 5-pound capacities — the right size cylinder for every portable use.

For Complete Data, Check New Product 665.



SOLDERING GUN:—Weller Electric Corp., 808, TEM, Packer St., Easton, Pa., has introduced a new low-cost Junior Soldering Gun with ample power for all general soldering. Designated Junior Model 8100, the new gun incorporates many of the features found in the larger models and is suited to the role of second soldering gun in the maintenance or craftsman's tool kit. It is rugged enough to withstand the impact of other tools, yet light enough to be easily portable for service calls and on-the-spot repairs. The list price is $7.95.

The Weller Junior Model 8100 is compactly designed in a durable shock-resistant plastic housing. Shorter length from grip to tip means easier storage and more convenient handling.

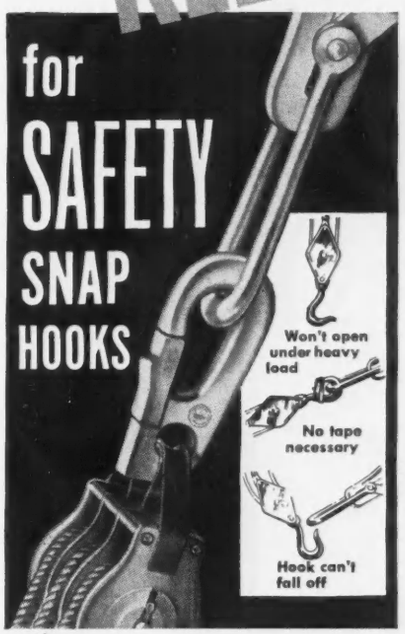
Trigger control switches heat on or off instantly at the touch of a finger. Dual prefocused spotlights illuminate the work area, dispensing with the need for holding a flashlight while servicing equipment in dark corners.

For complete data, Check New Product 666.

Look to the Leader

KLEIN

for SAFETY SNAP HOOKS



455 Solid Eye

455-S Swivel Eye

455-SH Swivel Eye

455-SP

Here's strength, safety on heavy loads—for blocks, tackles and hoists. Klein Safety Snap Hooks are time savers, too, eliminating the necessity of taping or wiring the throat. Made of drop forged steel—carry a working load of 8,000 pounds with adequate safety factor. Snap on easily with one hand—may be used on any conventional steel block 6 inches or smaller, or on chain hoists or snatch blocks. Four types regularly available. Specify 455-SH-3 Snap for use with 1½-ton hoists . . . No. 455-SP for double chain hoists and for attachment at housing. Klein can also supply safety snap hooks for lighter loads.

Foreign Distributor: International Standard Electric Corp., New York

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NP 662 ____ NP 663 ____ NP 664 ____ NP 665 ____ NP 666 ____

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ADV. 11 ____	ADV. 12 ____	ADV. 13 ____	ADV. 14 ____	ADV. 15 ____
ADV. 16 ____	ADV. 17 ____	ADV. 18 ____	ADV. 19 ____	ADV. 20 ____
ADV. 21 ____	ADV. 22 ____	ADV. 23 ____	ADV. 24 ____	ADV. 25 ____

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Company _____

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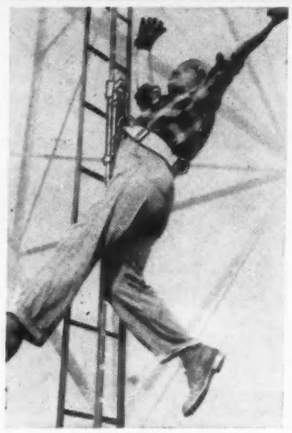
You Can't Fall
IT'S A LIFE SAVER



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Easy and inexpensive to install: Clamps to rung, peg, pole or frame. No welding or cutting.
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This popular book provides not only a thorough course in algebra, but also a survey of the mathematical highlights of trigonometry, analytic geometry and more advanced algebra and calculus — all written in a practical, interesting, and oftentimes humorous manner. Included are discussions of variables and extended analytic geometry.

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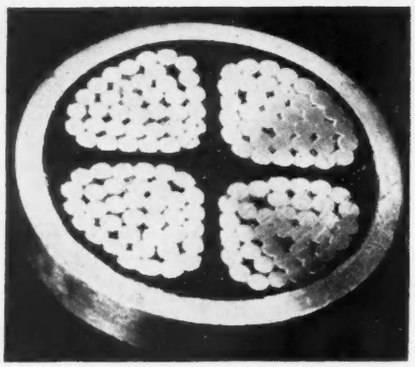


Shown above is a cross section of European low voltage power cable, aluminum sheathed by the direct extrusion process to be introduced in the United States by General Cable Corp., which has announced the purchase of an aluminum sheathing press from a leading West German firm. Preparations are now proceeding for the installation of the press in one of General Cable Corporation's plants in the Eastern United States. In 1952 the Atomic Energy Commission utilized aluminum-sheathed coaxial cable at its Las Vegas and Eniwetok installations.

diameter telephone cables were installed on each of the dirigibles Akron and Macon. In 1952 the Atomic Energy Commission utilized aluminum-sheathed coaxial cable at its installations at Las Vegas and Eniwetok, most of which were imported from Germany. Aluminum-sheathed cable is also receiving consideration for use in the Continental Defense Warning system.

George Veith Observes 50th Anniversary

George W. Veith, who joined Kellogg Switchboard & Supply Co., Chicago a division of International Telephone & Telegraph Corp., when the company's founder, the late Milo G. Kellogg, was president, celebrated his 50th year on the job August 18. Company officers, headed by President James H. Kellogg, grandson of the founder, entertained the 50-year man at luncheon at the Clearing Club on his anniversary. Mr. Veith was "toasted" by officers and long-time co-workers and presented with a handsome gift from the company.

G. W. VEITH

Now supervisor of switchboard apparatus scheduling, Mr. Veith has spent 40 of his 50 years on the job in the Kellogg production department, specializing in switchboard production. Watching the telephone industry grow from the days of magneto switchboards, when the operator was summond via "hand crank," to today's modern switchboards with coast-to-coast dialing has been a rich experience, he says.

When he joined the independent telephone and switchboard manufacturing company in 1904, as a 15-year-old, Mr. Veith recalls, Kellogg development engineers were just turning their attention from magneto to common battery switchboards. During his first year with the company, the first American-made cradle-type telephone instrument was introduced by Kellogg.

Mr. Veith's only extended absence from Kellogg was during World War I, when he saw action in the Argonne with the Fifth Marines' Second Division, AEF. Earlier in his career, he served the company for brief periods in Regina, Saskatchewan, Canada, and in Kansas City, Mo.

There was personal romance in the telephone business, too, for Mr. Veith. On February 28, 1922, he married a Kellogg co-worker, the former Lillian Andrews. They have two sons, Richard, Chicago, who saw service with the U. S. Navy in World War II, and in Japan during the recent Korean conflict, and Lt. William, career man in the U. S. Air Force, a veteran of overseas duty in World War II now currently stationed at Mountain Home Air Force Base at Mountain Home, Idaho. The Veiths also have four grandchildren, including two-months-old twin grandsons, the sons of Richard Veith.

New Position for Edgar L. Love

John Brown Cook, president of Whitney Blake Co. and Koiled Kords, Inc., both of New Haven, Conn., has announced the appointment of Col. Edgar L. Love as sales manager of the new Electronics Division of Whitney Blake.

Col. Love is also sales manager of Koiled Kords, Inc., and advertising and sales promotion manager of Whitney Blake.

The Electronics Division of Whitney Blake is introducing a line of newly designed connectors for the electronics and aircraft industries.

Weller Electric Promotes Witaker to Vice President

Weller Electric Corp., Easton, Penna., has announced the appointment of Joseph F. Whitaker as vice president in charge of sales. In his

new capacity, Mr. Whitaker will plan and supervise the national promotion and sales of Weller Soldering Guns, Soldering Kits, and Power Sanders. Immediate plans call for greater emphasis upon the increased versatility of Weller Soldering Guns through the use of two new interchangeable accessory tips. The company is also developing several new electrical products which it intends to introduce in the near future.

J. F. WHITAKER

Formerly with International Resistance Co., Philadelphia, Mr. Whitaker has been active in electronic component sales for the past ten years. He joined Weller Electric Corp., last year as sales manger.

RCA Names 8 To Sales Posts In Communications Marketing

APPOINTMENTS of E. J. Hart, as microwave equipment sales manager; D. C. Bright, as administrator of communications national accounts; and H. G. Boyle, as communications field sales manager, have been announced by the Engineering Products Division of the Radio Corporation of America, Camden, N. J.

At the same time, RCA announced the appointment of five district sales managers for communications equipment, both microwave and mobile two-way radios. They are: Bernard Gest, central region; K. R. McHenry, southwestern region; D. B. McKey, southern region; D. L. Pearlston, eastern region; and D. O. Reinert northeastern region. Continuing as district sales managers in other regions are: S. J. Combs, western region; F. C. Gusler, west central region; and C. K. Sulger, east central region.

Mr. Hart joined the company in January, 1953, as microwave sales coordinator, and prior to that engaged for seven years in sales engineering in the electronics field. Mr. Bright has been with RCA since the fall of 1950. when he entered the company's government equipment organization as a contract administrator. He was previously an engineer in the business machines field. Mr. Boyle joined RCA's sales organization in the fall of 1948, and was appointed district manager of communications sales in the eastern and northeastern region in the summer of 1952.

Hubbard Announces New Appointments

JAMES H. KNOWLES, president, Hubbard & Co., Pittsburgh, Pa., has announced the following personnel appointments and promotions:

Howard Jackson is promoted to vice president in charge of production at the Pittsburgh and Chicago plants. He has been with Hubbard & Co. since 1937, and was in charge of production of the Chicago plant. Previous to joining Hubbard, Mr. Jackson was superintendent of Stesco Steel Co., Michigan City, Ind.

H. JACKSON

Charles S. Kernaghan has been elected vice president in charge of merchandising and assistant to the president. Mr. Kernaghan had been vice president and director of the Waterman Pen Co. for the past 13 years and previously was with the Radio Corporation of America.

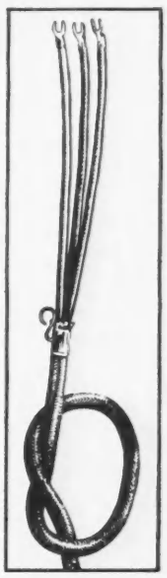
C. S. KERNAGHAN

Richard G. Robbins has been promoted to vice president and general sales manager of the Pittsburgh and Chicago plants, covering the Eastern and Mid-Western territories. Mr. Robbins joined the Hubbard organization in 1923 as an assistant to several department heads. His other positions with the company have been advertising manager, assistant sales manager, divisional sales manager, and vice president, eastern division.

R. G. ROBBINS

At the same time, it was announced that Alton R. Smith, assistant superintendent to Howard Jackson at the Chicago plant, had been promoted to works manager of that plant and that John Winke was appointed assistant works manager to Mr. Smith.

LET CORD CLAIMS CONFUSE YOU



After all, there is only one way to sensibly evaluate telephone cord performance and that is to put them to the final test —*actual service!* So we invite you to "service-test" COMMERCIAL CORDS on your own installations and judge for yourself. We'll gladly furnish cords for such tests if you'll tell us about your requirements.

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Complete new key shelves installed in 1952 when converted to harmonic selective ringing.
Complete mainframe equipped with Cook No. 3800 type protectors.
2 positions of the equipment were installed new in Nov. 1940, 1 position installed new in 1942, and 2 positions installed new in 1950.
Equipment has been properly maintained and in first class condition.
Now in operation, but should be available in October, 1954 account conversion to dial operation.

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Small PBX Type ..... @ $30.00
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3 Bar. 1000 Ohm. @ $18.00
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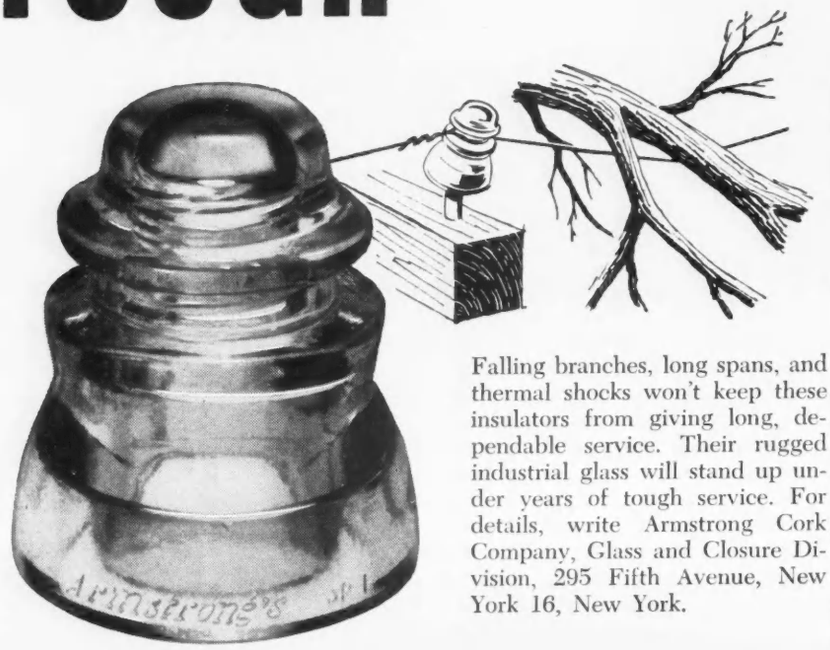

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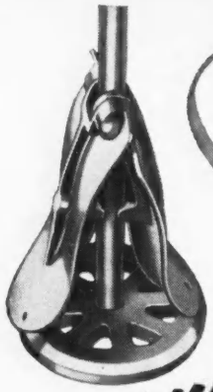

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FOR BETTER CONSTRUCTION . . . *SAFER* MAINTENANCE

L. J. Kallmeyer Named to New Post

APPOINTMENT OF LeRoy J. Kallmeyer as export sales manager of the Export Division of International Standard Electric Corp., was announced last month by Patrick J. McGann, vice president and export manager of ISE, which is the overseas manufacturing and sales subsidiary of International Telephone & Telegraph Corp. Mr. Kallmeyer, a New Yorker by birth and education, has been with IT&T since 1928 and with the Export Department of ISE since 1930, serving in its traffic, service, and sales divisions. Appointed manager, city sales, in 1951, Mr. Kallmeyer spent part of 1952 in Europe on special assignment in connection with the U. S. Offshore Procurement program. It is expected that he will soon leave on tour of various overseas sales areas of ISE.

L. J. KALLMEYER

Exide Names Williams & Dwyer to New Posts

THE BOARD OF directors of The Electric Storage Battery Co., Philadelphia, Pa., has elected Earl W. Williams treasurer and Edward J. Dwyer secretary. Mr. Williams formerly was assistant treasurer of the company, and Mr. Dwyer was assistant secretary.

Mr. Williams, a native of Tonica, Ill., entered the company's employ as a ledger clerk in 1923 shortly after his graduation from Bradley University, Peoria, Ill. He successively was advanced to cashier and company auditor before being named assistant to the treasurer in 1935. He became assistant secretary in 1938, and in 1941 assumed the additional duties of assistant treasurer.

Mr. Dwyer is a native of Norwalk, Conn. After receiving a Bachelor of Arts degree at St. John's College in 1930, he enrolled in Johns Hopkins University and was granted a Master's degree in Mechanical Engineering in 1933. Five years later he earned a Doctorate of Law at George Washington University.

For several years he was employed by General Electric Co. In 1941 he was appointed patent attorney by The Electric Storage Battery Co. and in 1948 became assistant secretary.

STROMBERG-CARLSON®

transmitter

Published by the makers of Famous XY® Equipment

Vol. 3, No. 7 October, 1954

Hats off to General of the Southwest

Service quickly restored after Fire and Floods

When disaster strikes without warning, the men and women in the telephone industry forget time, fatigue and danger — that's in the telephone tradition. This was certainly demonstrated by employes of the General Telephone Company of the Southwest, when the raging Rio Grande inundated Del Rio and a flash flood wrecked Ozona, Texas. Countless lives were saved by the devotion of operators and plant-men working knee-deep in muddy water so that emergency calls could get through.

Almost at the same time, fire and subsequent water damage knocked out the unattended XY dial office at DeKalb in east Texas. Here, also, emergency decisions were quickly made, and service restored in an incredibly short time.

While the fire blazed at DeKalb, a celebration was under way at Big Lake, 400 miles away, as a new 5-position switchboard was cut into service. General Plant Superintendent G. T. Sims contacted Central Division Plant Superintendent G. H. McLaughlin at 1:45 A. M. Tuesday to dismantle the old Big Lake board and take it to DeKalb. By 5 P. M. Wednesday the re-assembled board was manned by operators; by 11:20 P. M. all but three of the 480 telephones were again in service. Careful cleaning and the warm Texas sun was all that was needed to put the XY switches and circuit plates back in condition. Full XY dial service was resumed at DeKalb nine days after the fire.

Workmen swarm over building which houses DeKalb's unattended XY System, quickly repairing it.

Hot Texas sun dries out drenched XY equipment at DeKalb. Firemen doused the equipment while saving the building.

Makeshift canvas lean-to shelters General Telephone Company repair crew working on repairs to the dial equipment. L. to r., E. L. Langley, F. J. Essewein, H. V. Rutledge, D. C. Wills, M. O. Callaway.

Barbara Collins, an operator from Clarksville, and Mrs. Eleanor Braier, Eastern Division Traffic Supervisor from Texarkana, helped out on temporary board installed at DeKalb while switches were being dried out.

STROMBERG-CARLSON transmitter

PBX Instructors

The TRANSMITTER takes you along to see what your best good will ambassadors are up to

The girls in the pictures you see here are actual PBX instructors for the Rochester (N.Y.) Telephone Corporation. Their names: Kay Brown and Marjorie Skeates.

Because a large percentage of all telephone traffic comes through Private Branch Exchanges, you might be interested to see just how these instructors go about their rounds, building good will and helping subscribers get the best possible telephone service. On these pages we show you a typical day in their lives.

8:30 A. M. **CONFERENCE WITH THE BOSS. Kay, left, and Marge usually check in with William A. Pitbladdo, Traffic Superintendent, to talk over their plans for the day. Today, they find a few unusual wrinkles in a traffic study they performed at a large downtown bank, and decide to re-run the survey this afternoon.**

9:27 A. M. **LEAVING MARGE AT BUS STOP, Kay walks to a downtown brokerage office. Here, on a routine visit, she chats with the operator, observes the functioning of the board, keeping alert to possible methods of improving efficiency of the PBX.**

9:04 A. M. **ONE FOR THE ROAD. Marge stops for a quick drink as, each with a full schedule of calls, they leave the telephone company office building. Frequently this is the last they see of the office until next day. With 814 boards in the city of Rochester to keep a watchful eye on, they start early, often wind up their day late.**

9:55 A. M. **MARGE, MEANWHILE, has traveled out to a large industrial plant on the fringe of the city. To get to the part of the plant she must visit, she walks the equivalent of three city blocks. One of the primary requisites for a PBX instructor is a good sturdy pair of feet. At this plant, Marge spends the rest of her morning instructing a new operator.**

10:42 A. M. **30-POSITION TELEPHONE ORDER BOARD is in city's largest department store. Since department store turnover in employes is sometimes high, Kay is often called to train new operators. Today she checks with manager of the department, asks how her latest two trainees are working out. Despite the dismayed expression on her face, Kay is pleased because she's just been told they are catching on quickly.**

2:20 P. M. **STILL CONDUCTING SURVEY which began at one o'clock, each girl watches a position, counting all calls going through switchboard. Traffic studies are an important part of their job, since recommendations for new lines or equipment are based on their reports. This study is a re-do of the study they talked over with Bill Pitbladdo this morning. Irregularities appeared and they thought it best to recheck their findings.**

12:10 P. M. **TIME OUT FOR LUNCH. A quick sandwich at any convenient restaurant is the rule for PBX instructors. Since each noontime finds them in a different part of town, they get to visit a wide variety of eating places.**

12:59 P. M. **RENDEZVOUS LOCATION is doorway of bank where Kay and Marge will work together on a traffic study. Here Marge, a few minutes early for her one o'clock appointment, waits for Kay to join her.**

3:45 P. M. **KAY TO OFFICE, MARGE TO ANOTHER CUSTOMER. After the bank closes at 3:00, Kay takes their reports back to the telephone office to be typed, while Marge squeezes in one more customer call. Here in this modern advertising firm, a Stromberg-Carlson No. 121 cordless switchboard has been installed. Using the new instructional booklet supplied by the manufacturer, Marge goes through operation of the board step by step. Clear, simple illustrations in booklet help make her job easier.**

5:23 P. M. **WOULDN'T YOURS? Weary feet are an occupational hazard of the PBX instructor. Kay and Marge make 2,000 visits a year, and most are in the downtown area where short distances make walking the only practical means of transportation.**

STROMBERG-CARLSON transmitter

First customer toll dialing in Ohio

Western Reserve Telephone Company Makes History in the Buckeye State

Subscribers in Hudson can dial direct to any telephone in area shown on this map. Shaded portion shows those Western Reserve exchanges presently included in the Hudson XY Toll Ticketing System.

From Hudson, Ohio, you can now dial any telephone subscriber in any of the towns shown on this map.

Before this month, Customer Toll Dialing was still a gleam in the eyes of Ohio telephone men. Then Western Reserve Telephone Company, known for its progressive outlook, broke the ice. Early this month, Western Reserve cut over an XY Toll Ticketing system in Hudson — the first Customer Toll Dialing in the state of Ohio.

This cutover, attended by many prominent leaders in telephony, business and politics, provided a system through which subscribers in Hudson have direct dial connection with 102 other exchanges (over 840,000 stations) in northeastern Ohio.

Russell, another Western Reserve Telephone Co. exchange, has a similar service to all the offices in metropolitan Cleveland and its suburbs. The new XY Toll Ticketing system is so designed that this service will be extended to all the other exchanges in the Western Reserve area, in the future.

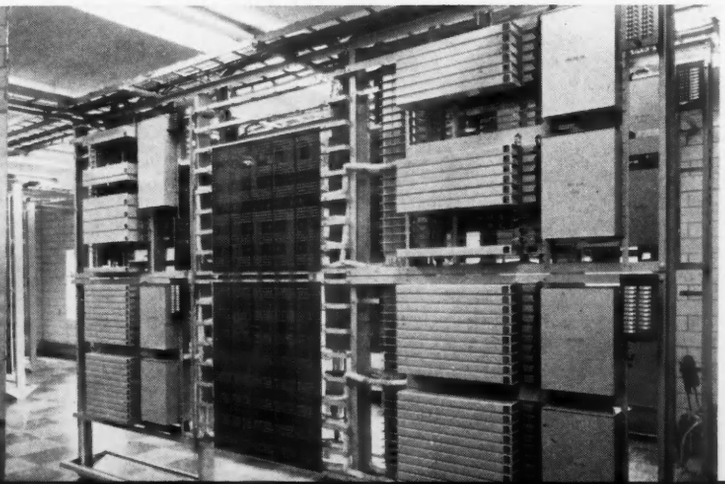
As XY Toll Ticketing went into operation, a 1200 Terminal XY Dial system was also cut over to serve Hudson. Both of these systems are housed in the company's general office building at Hudson.

This history-making event is evidence of the foresight of the Case family, who realized the importance of Hudson as a major short haul toll center, and have moved swiftly and efficiently to provide the best possible toll equipment.

Mrs. Harry Case and her four sons — Weldon, Ted, Nelson, and Baxter — manage the telephone company which has been in the family for three generations. One problem with which they have successfully coped is the rapid growth of population within their area. For example, Hudson itself added four new subscrib-

Nelson (left) and Ted Case examine some of the first tickets produced by new XY Toll Ticketing System at Hudson.

Toll Ticketing equipment and Hudson's XY Dial system are both housed in one room for easy inspection and servicing. Below the grading panel.



Mrs. Harry Case, president of Western Reserve Telephone Company, is surrounded by (l. to r.) sons Baxter, Nelson, Weldon, and Ted. All are active in management.

ers for every ten old ones, in just three years.

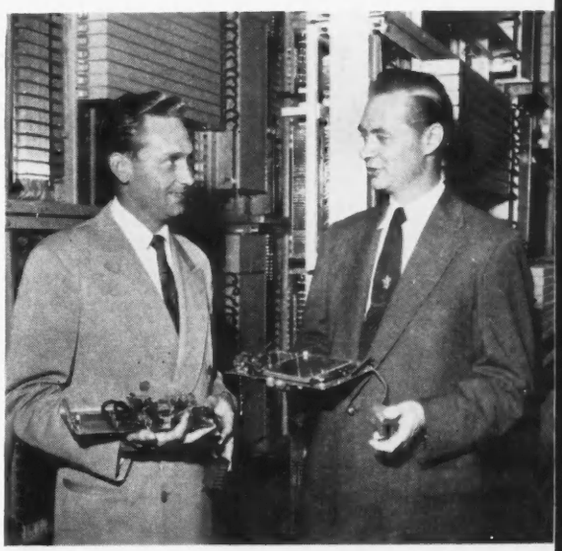
Besides keeping up with the expanding needs of their subscribers, the Cases have gone on ahead and provided for future growth. Most of their exchanges now are served by dial systems, including the new XY system at Hudson. Open wire has been replaced by cable between towns. And now Customer Toll Dialing is provided for their subscribers — the first Ohioans to get such service.

These developments are in the tradition of W. C. Wood, founder of the company and grandfather of the four Case brothers who pioneered in such developments as underground cable throughout the town and common battery operation.

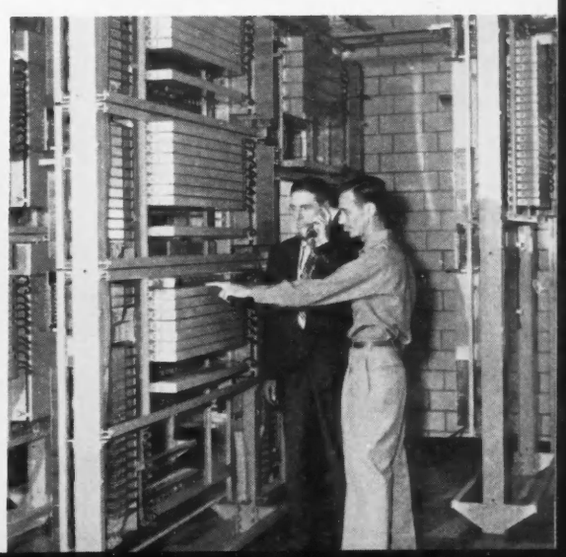
Mrs. Case is president of the Western Reserve Telephone Company. Weldon Case, vice-president and general manager, is well known among Independent telephone people for his activities in USITA and the Ohio Independent Telephone Association, of which he is a past president.

Many Independent telephone executives, on their way to the USITA National Convention in Chicago, stopped off at Hudson to watch the cutover of the XY Dial office and XY Toll Ticketing system. Many others have since accepted the invitation of the Case family to stop in at Hudson and see the "toll system of the future" at work today.

Baxter Case, left, holds the universal XY Switch, while Weldon Case demonstrates that the XY Toll Recorder is a twin in size and mounts in the same manner.



William Woods, Western Reserve Telephone Co. Plant Superintendent, (left) and Elmo Landry, Stromberg-Carlson installation foreman, conduct final tests of XY system just prior to the recent cut-over.



Enlarged and modernized home office at Hudson. The XY Dial equipment and XY Toll Ticketing apparatus are on the second story; enlarged commercial and plant offices below.

STROMBERG-CARLSON *transmitter*

Columbia Utilities Co. Converts to XY

D. O. Hood, Medford, Oregon

Mr. D. O. Hood, President of the Columbia Utilities Company of Medford, Oregon, is nationally known for his untiring efforts toward the welfare of the Pacific Coast associations and the USITA. His many friends will rejoice to hear that, with the conversion of White City, Oregon, to XY, his latest dial program is well under way.

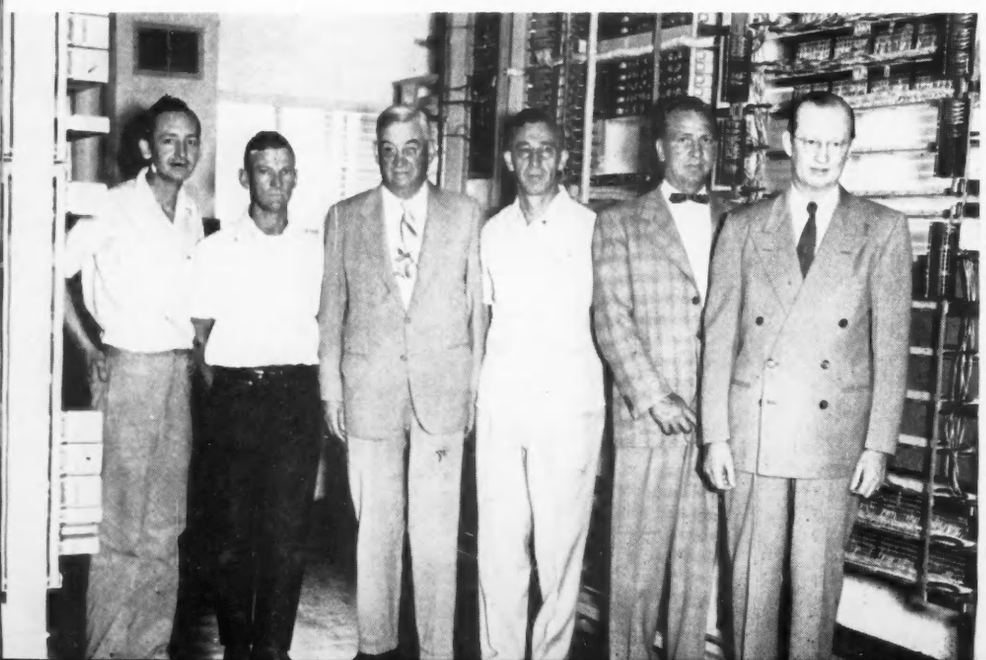
The initial cut-over serves White City and Eagle Point, with extended area service to the Pacific Tel. and Tel. Company's exchange in adjacent Medford. The 2-5 numbering plan is used, and White City has become the toll center for Columbia's network in the area.

XY Toll Ticketing is being provided for the entire group of exchanges, including calls to Medford. When the system is installed the complete network will go to intertoll, with the toll calls tandeming through the White City XY equipment.

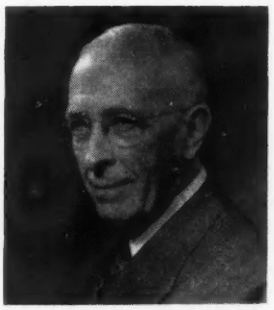
White City is the location of the former Camp White Army Cantonment, activated during World War II. The Veterans Administration Domiciliary and Hospital, one of the largest in the country, is also here. New industries have been established, so that White City has become a fast growing manufacturing center. Mr. Hood, in his original planning, has chosen wisely and made adequate provision to handle the expected increases in both local and toll traffic.

Company officials at the cut-over praised the work of the Stromberg-Carlson installers under the direction of Stanley Suddith.

Among those present at White City cutover: S. G. Suddith, Stromberg-Carlson installation foreman; L. K. Baker, switchman, Columbia Utilities Co.; D. O. Hood, President, and F. M. Bruegger, District Manager for Columbia Utilities Co.; Morris Hansen, Stromberg-Carlson; J. W. Kirby, Vice President, Columbia Utilities.



A Toast, Mr. Griswold!



Mr. H. H. Griswold, Phelps, N. Y.

The occasion — if one were needed — his 53rd wedding anniversary, and his 50th year as a telephone man. Everyone in western New York knows H. H. Griswold, president of the Ontario Telephone Co. at Phelps; many believe that the initials "H. H." stand for "He's Happy."

His has been a good and full life. After many years with the Bell Company he decided in 1920 to go it on his own. The record is impressive: Phelps, Clifton Springs, Trumansburg, Interlaken, Ovid and the Willard State Hospital all brought into the system for a total of 5,500 stations, with XY Dial either installed or on the program for the near future.

He's "Happy" that his son Malcolm, now vice-president and general manager, chose to enter the business with him; that his grandson expects to join the father-son team on his discharge from the Air Force.

He's "Happy" that the citizens he serves chose to honor him with the Mayor's post for 8 years and elected him to many other civic positions of responsibility. When it came to financing the expansion, his neighbors and friends over-subscribed the stock issue.

Yes, H. H. Griswold is happy. A toast to you, sir!

Ilwaco, Washington, August 27. A combination of fast, dependable service with their new XY Dial System and a new city water system will result in lower insurance rates for all citizens. A recent survey by the state Rating Bureau stamped the telephone system "tops."

STROMBERG-CARLSON transmitter

MEET
Frank Morris

In the relative seclusion of the Stromberg-Carlson Research Laboratory, Frank Morris may even now be dreaming up some new communications system which will obsolete present patterns — and decades later be claimed by the Russians! At 12, he had built his own first automatic switching system, worked by buttons; his present home at the Rochester "Y" is so completely wired for sound that he can dial his choice of radio programs while enjoying a bath. And the "Y" has benefited enormously from his proficiency with mastering the sound waves.

Frank was project engineer on what was probably the world's first complete electronic switching system; while the system was abandoned as not then (1945) being commercially practicable, the development of the transistor has given a new value to this early pioneering. His current interest has been Toll Ticketing and the compilation of traffic pattern studies for operating companies interested in reducing their toll costs. (More of this in a future issue).

Frank's boyhood home straddled the line in Dover-Foxcraft, Maine; his father always breakfasted in Dover, while mother sipped her coffee in Foxcraft. "This," says Frank, "explains any tendency toward dual personalities!" Electrical Engineering at the University of New Hampshire, then several years at Bell Labs, where he worked on Toll Crossbar, and helped with the first co-ax transmission of T.V. (Philadelphia to New York in 1940.)

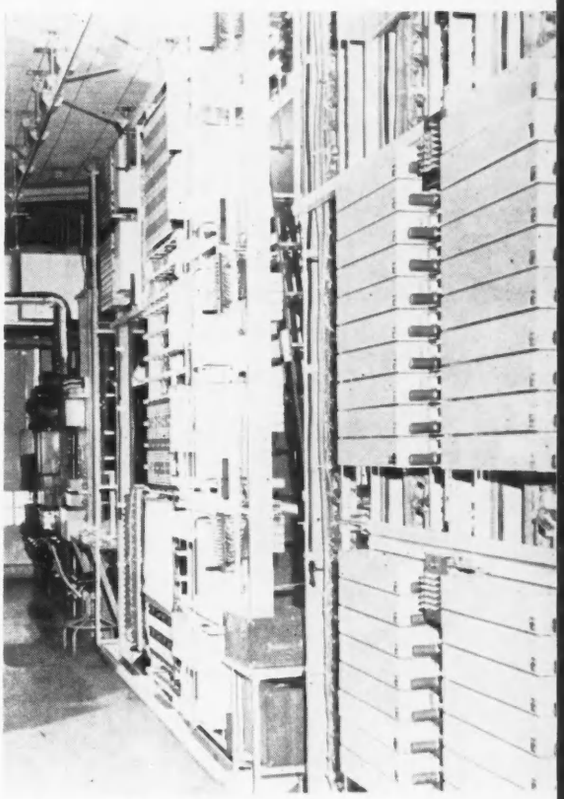
Many hobbies vie for first place; two stand out. He has taken his cruiser through every canal in the East, while preparing several thousand feet of movies complete with script and musical scores. Hi-fidelity music — both reproduction and recording — runs a close second. He built his first system in 1934, and is continually rebuilding for himself or others. Whatever Frank decides to do next — you can be sure it will be unusual and dramatic.

13,000 Subscribers Now Served By Greenwood, So. Carolina, XY Intertoll

A mid-summer cut-over to XY Intertoll brought intertoll dialing to Greenwood, South Carolina and the 13,000 subscribers served by the Greenwood Telephone Company — making this one of the largest toll centers in the state.

As the XY dial equipment was cut into service, direct two-way intertoll dialing became available to all ten towns in the Greenwood system. Besides Greenwood and a new 400-line XY-CDO at Saluda, S. C., the company has unattended dial CDO's at Ninety Six, Hodges, Troy, West End, Cross Hill, Chappells, Ware Shoals and McCormick. Outside the system, two-way intertoll dialing is provided to Anderson, Greenville, Spartanburg, Abbeville, and Clinton in South Carolina; Atlanta, Augusta and Elberton in Georgia; and Charlotte, N. C.

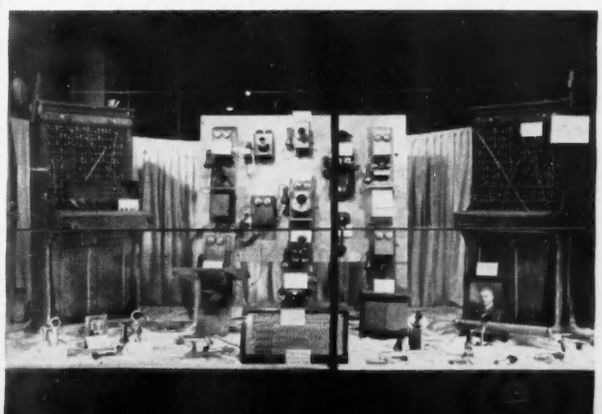
Mr. C. B. Barksdale, President of the Greenwood Telephone Company voiced extreme pleasure with the traffic savings, increased speed and performance of the XY Intertoll dial equipment. The management worked closely with Stromberg-Carlson field engineers in modifying the existing local dial equipment to meet intertoll supervisory requirements. Installation foreman was Edward Hagan.



Part of new XY Intertoll office at Greenwood, S. C.

Old Meets New at Warsaw, Indiana

The old telephones below were exhibited by the United Telephone Co. of Indiana in their Centennial celebration. By contrast, right, Suzanne Stauffer — former New York fashion model and now secretary to the Traffic Superintendent — places call in new outdoor pay station booth.



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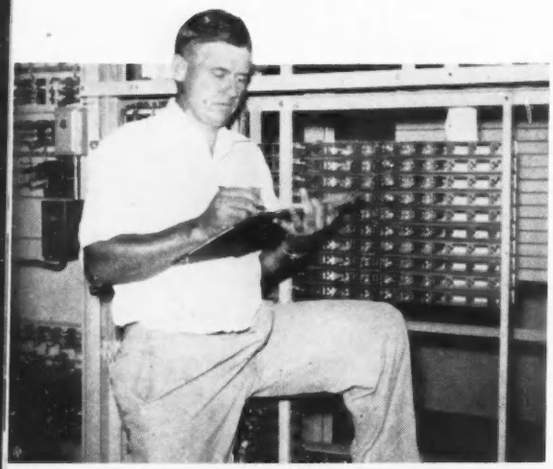
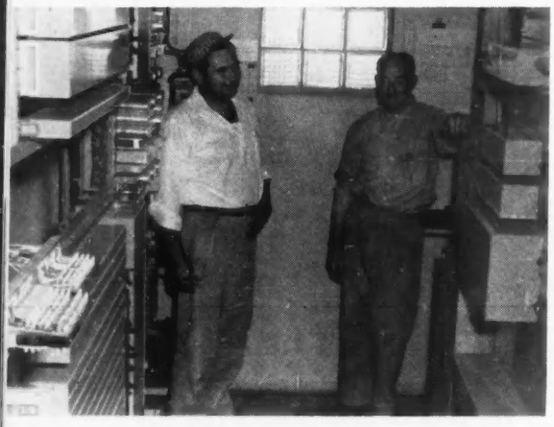
Saluting Some New Members of the XY Dial Family



John Robertson, Geary, Oklahoma

Geary, Oklahoma

John Robertson likes to do his own checking, and he had to be satisfied personally that his new XY System was in tip-top shape before cutting his subscribers' phones to dial. John grew up with telephones, since his parents owned the Hydro Telephone Company; also he took time out from school to get more experience before taking his degree at Oklahoma A. & M. A few days after cut-over, John was caught sharpening up his fish hooks!



Robert Zimmerman, Wire Chief (left) and Gilbert Chamberlain, Manager, of the Glasford, Ill., Switchboard Committee.

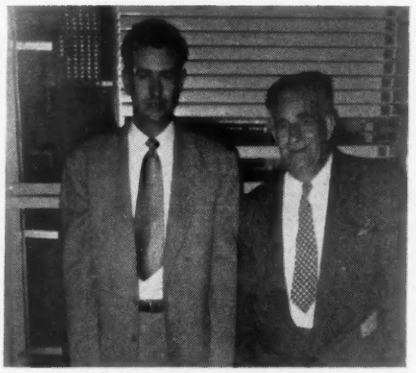
Glasford, Illinois

The two men shown at left, Robert Zimmerman and Gilbert Chamberlain, operate the new XY System of the Glasford Switchboard Committee. This 100-line CDO serves a group of line companies, each of which furnishes one member of the committee. The group, as a whole, operates similar to a Mutual company, with each member owning a portion of the system. Probably few systems today have subscribers who are in a better position to understand the management's point of view.

Harry Bennett can take pride in this neat new XY dial office at Waco, Mo.

Waco, Missouri

More than 250 rural subscribers in a 100-square-mile area are now enjoying the most modern dial service furnished by the Waco Telephone Company. At the cut-over dinner Mr. and Mrs. Harry Bennett entertained friends and well wishers from the surrounding towns. Representatives of the Southwestern Bell Co. were present; also Mr. and Mrs. Orpheus Hucts of Purcell, Mr. and Mrs. Walter Mitchell of Seneca, Mr. and Mrs. Cecil McCullough of Avilla and Mr. and Mrs. Victor Rhine of Pineville.



J. W. Christian, Jr. (left) and Sr. make history in Nevada. Father began in 1926. Son recently attended XY school in Rochester.

Pioche, Nevada

At seven a.m., August 20, the Lincoln County Telephone System of Pioche, Nevada, made history as they cut five "XY" offices and two positions of toll board into service.

Mr. J. W. Christian and his son John Christian, Jr. who so capably manage this company, realized some time ago that it would be necessary to keep pace with the telephone industry in order to furnish their customers with the most modern type of telephone service. They set out to do something about modernizing their system which covers the entire county of Lincoln, some 10,000 square miles, serving the towns of Alamo, Caliente, Caselton, Panaca and Pioche. Due to their vast area and rugged terrain financing became a major problem so they turned to the R.E.A. for assistance and made arrangements to borrow the necessary funds. This was the first R.E.A. program in Nevada.

The Christian family are pioneers in this area. J. W.'s mother and father arrived in Pioche back before the turn of the century. His mother, known to everyone as Grandma Christian and beloved by all, is still living at the age of 84. He has a lovely wife, daughter Jo Anne, son John Jr., daughter-in-law, and two fine grandchildren.

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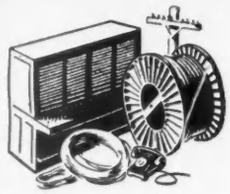

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The Back Of The Book

By JOHN G. REYNOLDS

Volume Telephone Users

SOUTHERNERS do talk more than anybody else in the country — at least on the telephone.

The Southern Bell Tel. & Tel. Co. has figures to prove it.

Easterners talk the least.

Westerners and Midwesterners, including Northerners, talk more than Easterners but not so much as Southerners.

These conclusions are based on statistics compiled by the Southern Bell.

The telephone company has what is known as a "calling rate" — that is, the number of daily calls per telephone in relation to the total number of phones in a city.

Of 19 cities listed by the company, New Orleans has the highest rate — 8.11 — and Washington the lowest — 4.08. Chicago's rate is only 4.10.

What accounts for the South's talkativeness?

R. M. Watson, Louisville district manager for Southern Bell, has this explanation:

The South, traditionally noted for hospitality, does more "socializing" on the phone.

Whether women or men talk more the company can't say.

But "residential usage is much higher than business usage," Watson says, and this indicates women are more talkative than men.

Top Bargains By Phone

CHICAGO HOUSEWIVES, before starting on a shopping tour, may now dial a telephone number and hear by tape recording "the top six bargains of the day" in the same manner they telephone to get the weather and time signals.

The introduction of automation to bargain hunting is the brain child of Robert W. Ward, for 10 years a sales manager for radio station WJJD, Chicago, who quit his job to start "Bargain Shopping Services, Inc." This service, with a 50-phone trunk-line, now averages more than 1,000 calls a day from shoppers interested in getting the latest tips on price reductions.

"We never list an item in our six best bargains of the day unless it is a 'special' that has been cut drastically from regular prices," Mr. Ward said.

Stores, however, pay a penny an incoming call, plus $5.00 a day recording charge, for a listing on Mr. Ward's tape recorded message. Illinois Bell Telephone Co. has a special meter on Mr. Ward's trunkline device which records the number of incoming calls every day. The recorded message is changed daily. At 3 p.m. the next day's message starts. The service has about 40 regular advertisers, some of whom list their wares twice a week, while others, mainly food stores, are "on the phone" daily. In case of a jam-up with more than six firms seeking time on any one day, the firm that has been advertising longest gets the space.

Penalty of Progress

ACCORDING TO Illinois Bell, an elderly lady whose interests and activities increased as she grew older, had been giving her telephone a real workout until progress caught up with her in the shape of the dial system. She protested bitterly that she'd never be able to use this new-fangled gadget. To prove how simple dialing really is, the local manager suggested she try *some number she called frequently*. She thought of *her broker*. After a good deal of prompting, she got the number and decided somewhat reluctantly that it might work out. Two weeks later her son got a call at his office from an exasperated senior partner at the brokerage house. "Jack," he sputtered, "I have relayed your mother's grocery orders. I have made her appointments with the hairdresser. I have even transmitted her acceptance of three invitations to tea parties, but now I draw the line. I positively refuse to solicit contributions for her church cake sale. Either she learns to dial some other number besides mine or she gets herself a new broker!"

Dog Psychiatrist

WE HAD HEARD tell of dog psychiatry. But we are happy now to report a practical use for same as discovered by *Chicago Briefs* and now recorded for the industry by the *Illinois Bell Telephone News*.

Seems a dog named MacDougall barked like crazy every time the telephone rang. It drove him into a frenzy. Enter the dog psychiatrist. MacDougall, he recalled, had once suffered a broken leg. Near MacDougall's bed was a telephone. Ever after, the dog associated the ringing of the bell with the pain of the broken leg. Every time it rang, he suffered a psychopathic relapse.

Such a problem didn't faze Illinois Bell. It sold MacDougall's master on the idea of installing a xylophone chime in place of a regular bell (at $1.50 a month extra charge). The chime of the music soothed the savage beastie. No more tantrums when the telephone "rings."

Smart Move

THE WALTHAMSTOW and Chingford Chess Club has found that even in Britain it's cheaper to play chess by phone. The Club engaged a telephone line for four hours for a recent match against Southend at a cost of 32 shillings ($4.48). It would have cost the players three times as much in rail fares to have had an ordinary match.

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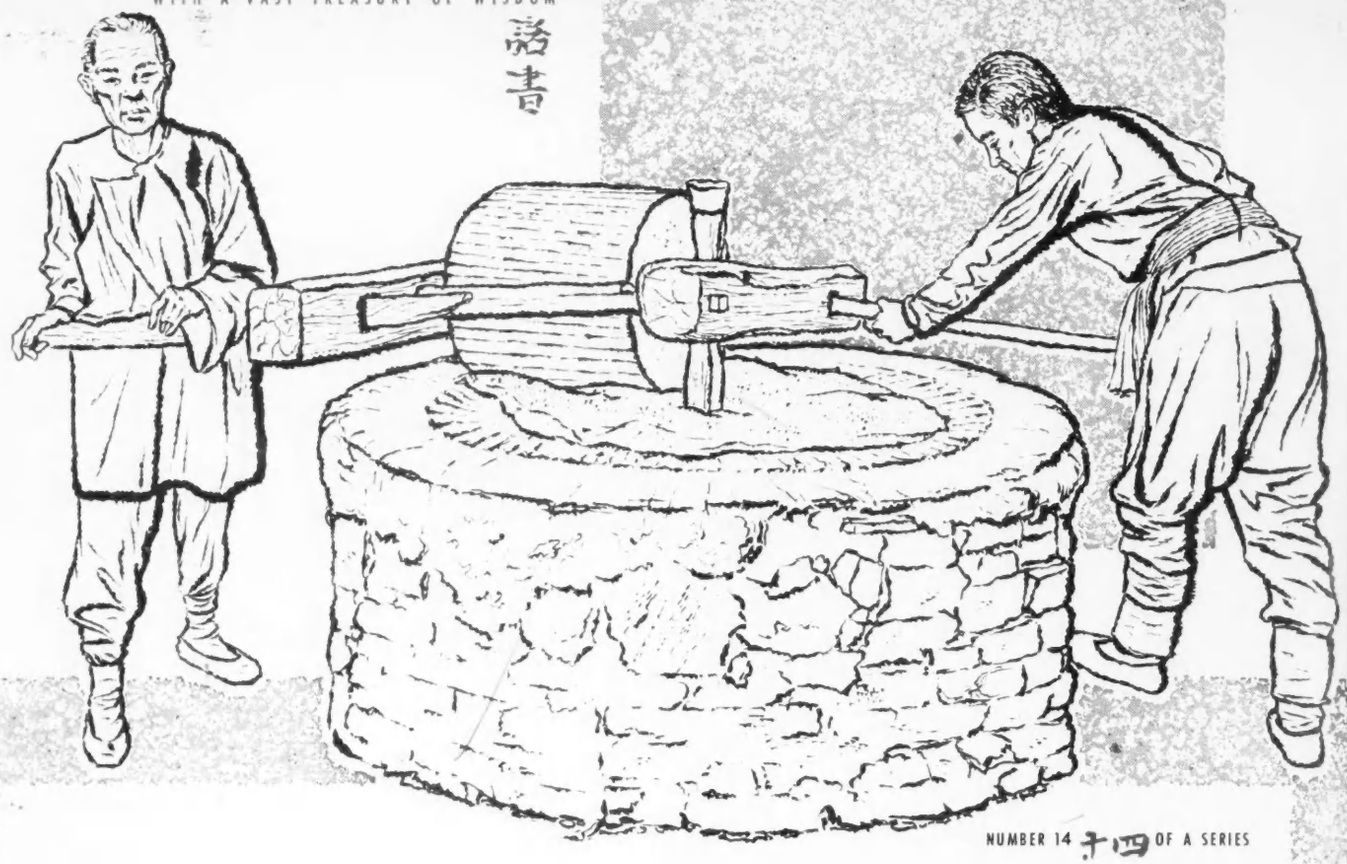

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